A Systematic Scoping Review of Climate Finance Law in Guyana: Opportunities and Challenges within the Context of Significant Oil Discoveries

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A Systematic Scoping Review of Climate Finance Law in Guyana: Opportunities and Challenges within the Context of Significant Oil Discoveries

Katrien Steenmans[*]

Abstract

Guyana is particularly vulnerable to climate change and its effects. It is highly susceptible to rising sea levels and flooding, as a result of much of its population living at or below sea level, and its worn coastal infrastructure. Guyana's government has recognised the urgency of addressing climate change but identified its limited financial capacity to take climate adaptation and mitigation actions. Nevertheless, it has adopted some law and policy initiatives to enable increased public and private climate finance. Simultaneously, laws and policies exist to financially enable exploration and production of significant oil resources recently discovered, even though oil exploration and production are a major driver of climate change. This article presents a scoping review, facilitated by Bowman's (2018) Legal Analytical Framework of Climate Finance Options, of climate finance law in Guyana and the possible tensions that exist with laws and policies for the purpose of financing the exploration and production of oil discoveries. The wider contribution of this article is therefore to the emerging field of climate finance law by reviewing the Guyanese experience to date.

1. Introduction

Climate change is expected to have wide-ranging impacts – from rising sea levels, to more frequent and longer-lasting heat waves, to more extreme precipitation events.[1] Mitigating and adapting to climate change is thus essential, but this will require significant financial resources. This need has been widely recognised at international level; the United Nations Framework Convention on Climate Change[2] (UNFCCC) regime aims to mobilise USD 100 billion annually by 2020 for climate mitigation and adaptation,[3] though this falls short of the estimated required amounts by other organisations. The Global Commission on the Economy and Climate, for example, estimates that USD 90 trillion investment in infrastructure is needed,[4] and the International Energy Agency estimates investment of USD 13.5 trillion in energy efficiency and low-carbon technologies by 2030 is required to meet current climate pledges.[5]

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[1] IPCC, *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, R K Pachauri and L A Meyer (eds)] (IPCC 2014) 10.

[2] United Nations Framework Convention on Climate Change (Bonn, 4 June 1992; in force 21 March 1994) UN Doc FCCC/INFORMAL/84.

[3] This commitment was first made in 2009 at the 15th Conference of the Parties (COP) in Copenhagen: UN Decision 2/CP.15 (Copenhagen Accord) UN Doc FCCC/CP/2009/11/Add.1, art 8.

[4] The Global Commission on the Economy and Climate, *The Sustainable Infrastructure Imperative: Financing for Better Growth and Development* (The New Climate Economy 2016) 23.

[5] International Energy Agency, *Energy and Climate Change: World Energy Outlook Special Briefing for COP21* (OECD/IEA 2015) 4.

The Co-operative Republic of Guyana (Guyana) is particularly vulnerable to climate change and its effects. It is, for example, highly susceptible to rising sea levels and flooding, as a result of almost 80% of its population living at or below sea level, its worn coastal infrastructure, sea level along the Guyanese coastline rising faster than the global average (its capital, Georgetown, already relies on seawalls for protection), and almost all of its agricultural production being on the coastal plain.[6] The resultant consequences of increased sea level and flooding are anticipated to include detrimental impacts on human health through the contamination of potable water and increased incidence of diseases, and on agriculture, one of the most productive sectors of Guyana's economy, through flooding of valuable agricultural land.[7] The Government projects that the required adaptation costs alone of these anticipated impacts could be in excess of USD 1 billion,[8] which is equivalent to almost one third of Guyana's Gross Domestic Product (GDP).[9] In recognition of this, Guyana has emphasised the need for financial support in its Nationally Determined Contribution (NDC). NDCs are a requirement by Article 4(2) of the Paris Agreement within the UNFCCC[10] that communicate the efforts by each country to reduce national greenhouse gas emissions and adapt to climate change. Moreover, Guyana has taken law and policy actions to help address the need for climate finance as discussed in this article.

Alongside the advancements in climate awareness, there have been significant discoveries of oil resources estimated to exceed five billion barrels of oil equivalent in Guyana.[11] These discoveries are expected to almost triple Guyana's GDP and are hoped to strengthen education, healthcare, and infrastructure for the Guyanese,[12] including the more than 36% of Guyanese that live in poverty.[13] Within the context of climate change, however, such

[6] Co-operative Republic of Guyana, 'Initial National Communication in Response to its Commitments to the UNFCCC' (April 2002) 75 and 80 <https://unfccc.int/resource/docs/natc/guync1.pdf> accessed 19 July 2019; ECLAC, 'An Economic Impact Assessment of Climate Change in Guyana – Agriculture, Coastal and Human Settlements and Health Sectors' (2011) 4 FOCUS Newsletter of the Cooperation and Development Committee 1, 1-2; Office of Climate Change, Office of the President, 'Impacts of Climate Change on Guyana and the World at Large. Part 2: Impacts of Future Climate Change' (n.d.) 2-3 <www.lcds.gov.gy/index.php/documents/climate-change-information/understanding-climate-change/235-understanding-climate-change-impacts-of-climate-change-on-guyana-and-the-world-at-large-part-2-impacts-of-future-climate-change/file> accessed 19 July 2019.

[7] ibid.

[8] Office of the President, Republic of Guyana, *A Low-Carbon Development Strategy: Transforming Guyana's Economy while Combating Climate Change* (Office of the President, Republic of Guyana 2010) 37.

[9] Based on 2018 data, when the GDP of Guyana was USD 3,610,435,299 – The World Bank, 'Data' (2019) <http://datatopics.worldbank.org/world-development-indicators/themes/economy.html> accessed 16 July 2019.

[10] Paris Agreement (Paris, 12 December 2015; in force 4 November 2016).

[11] ExxonMobil, 'ExxonMobil Increases Stabroek Resource Estimate to 5 Billion Barrels; Makes 10th Discovery' (*ExxonMobil*, 3 December 2018) <https://news.exxonmobil.com/press-release/exxonmobil-increases-stabroek-resource-estimate-5-billion-barrels-makes-10th-discovery> accessed 8 August 2019.

[12] *Eg* Guyana Chronicle. 'How Will Guyana Benefit from Oil Revenue?' *Guyana Chronicle* (8 August 2018) <http://guyanachronicle.com/2018/08/08/how-will-guyana-benefit-from-oil-revenue> accessed 16 July 2019; Robin Mills, 'Guyana May be the Next Big Beast in Global Oil' *The National* (8 October 2018) <www.thenational.ae/business/energy/guyana-may-be-the-next-big-beast-in-global-oil-1.778295> accessed 16 July 2019; The Commonwealth, 'Oil Set to Help Guyana Boost Economy and Benefit its Citizens' (*The Commonwealth*, 25 January 2018) <http://thecommonwealth.org/media/news/oil-set-help-guyana-boost-economy-and-benefit-its-citizens> accessed 16 July 2019; Jennapher Lunde Seefeldt, 'Guyana Hopes Oil Will Bring Wealth – Not Corruption and Crisis' *The Conversation* (21 February 2019) <https://theconversation.com/guyana-hopes-oil-will-bring-wealth-not-corruption-and-crisis-108958> accessed 16 July 2019.

[13] Richa Sekhani, 'Poverty Facts: Almost 4 in 10 Guyanese Cannot Afford Basic Costs of Living' (*Guyana Budget & Policy Institute*, August 2017) <https://gbpi.institute/wp-content/uploads/2017/08/FS_Poverty_20.8.2017.pdf> accessed 16 July 2019; Andrew Bauer, David Mihalyi

discoveries are worrying as the production and consumption of oil contribute to greenhouse gas emissions.[14] There are consequent concerns that offshore drilling would transform Guyana from a carbon sink (*ie* absorbs more carbon than it releases as carbon dioxide) to a net source of carbon dioxide emissions.[15] Furthermore, 'Guyana's own history also suggests that the oil economy is likely to do more harm than good'.[16] Mobilising financial resources for climate action whilst also encouraging oil exploration and production, which contribute to climate change, are therefore conflicting aims. This article explores the possible tensions, and possible synergies, that exist between laws and policies supporting the financing of these aims. This exploration is facilitated by the Legal Analytical Framework of Climate Finance Options. The purpose of this article is therefore two-fold; this article (1) explores climate finance in Guyana, and (2) tests the usefulness of the Framework as an analytical method to investigate climate finance.

The remainder of this article is structured as follows. The next section first describes the key terms used in this article and the method of scoping review adopted, as facilitated by the Legal Analytical Framework of Climate Finance Options. Section 3 then reviews climate finance options in Guyana. The penultimate section, Section 4, reviews finance options for oil exploration and production, and identifies possible synergies and tension with Guyanese climate finance options. Section 5 concludes.

2. Research Design

This article explores the current position of climate finance law in Guyana as enabling the financing of climate mitigation and adaptation actions, and identifies synergies and tensions that may exist with laws and policies for the financing of oil exploration and production. This research aim is realised through a desk-based scoping review facilitated by the Legal Analytical Framework of Climate Finance Options. Before the approach and framework are detailed, this section first briefly discusses the key terms adopted in this research: 'climate finance' and 'climate finance law'.

2.1. Climate Finance and Climate Finance Law

There is no single agreed definition of climate finance, with international agreements such as the UNFCCC and Paris Agreement also not defining the term but only referencing the need to mobilise it from 'a wide variety of sources, instruments and channels'.[17] In general, definitions of climate finance cover at least one of the components of: its purpose (eg to support low-carbon projects), source (*eg* public or private sector), and direction of financial flows (*eg* developed to developing). For example, Venugopal and Patel state that climate finance in its broadest interpretation 'refers to the flow of funds toward activities that reduce

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and Fernando Patzy, *Discussion of Guyana's Green Paper on "Managing Future Petroleum Revenues and Establishment of a Fiscal Rule and Sovereign Wealth Fund* (Natural Resource Governance Institute 2018) 2.

[14] *Eg* Simon Dietz and others, *Carbon Performance Assessment in Oil and Gas: Discussion Paper* (Transition Pathway Initiative 2018).

[15] Bretton Woods Project, 'World Bank DPL Paves Way for Offshore Drilling in Guyana, Despite CSO Concerns' (*Bretton Woods Project*, 24 July 2018) <www.brettonwoodsproject.org/2018/07/world-bank-dpl-paves-way-offshore-drilling-guyana-despite-cso-concerns> accessed 1 August 2019.

[16] Collin Constantine and Tarron Khemraj, 'Geography, Economic Structures and Institutions: A Synthesis' (2019, in press) Structural Change and Economic Dynamics 1, 5.

[17] Paris Agreement., art 9(3).

greenhouse gas emissions or help society adapt to climate change's impacts',[18] thereby addressing its purpose; Stadelman and others define climate finance as 'financial flows mobilized by industrialized country governments and private entities that support climate change mitigation and adaptation in developing countries',[19] covering the purpose, source, and direction; and Zahar distinguishes between finance raised by states pursuant to their international UNFCCC obligations and finance raised through the deployment and leveraging of state finance,[20] thereby focusing on sources of finance.

The lack of a concrete agreed definition of 'climate finance' can be problematic because it can affect reporting, tracking, and monitoring practices; the differences in definitions result in different perceptions as to what entities, activities, and financial flows are considered, which can, in turn, affect the consistency of data between sources.[21] The lack of consistent data can have a knock-on effect on effectiveness, as it can limit to what extent the data can be used to clearly identify where financial interventions can best impact the scaling up of climate finance.[22] This article does not seek to resolve these issues, as they are beyond and do not impact the purpose of this scoping review. In this article a very broad definition of climate finance is adopted: public and private financing for climate adaptation and mitigation projects, both raised within country but also financial flows from other countries (whether developed to developing or developing to developing countries).

The particular focus is on 'climate finance law'. Climate finance law is an emerging field with 'very poorly developed literature'[23] – only Zahar, Bowman and Steenmans have explicitly used and discussed the term in published academic literature.[24] Zahar defines climate finance law as 'the existence of state obligations on climate finance, whose imposition on Annex II parties at the outset of the UNFCCC regime (through article 4.3 of the Convention) is not really in doubt'[25].

That is, he relies on a 'teleological analysis of the treaty law elaborated by the [UNFCCC] regime'.[26] Bowman and Steenmans instead adopt a much broader definition: 'the matrix of laws and regulation, both domestic and international, that mobilise and leverage finance and investment for climate mitigation and adaptation'.[27] The latter definition is adopted for similar reasons provided by Bowman and Steenmans: 'This broad definition is seen as most

[18] S Venugopal and S Patel, 'Why is Climate Finance so Hard to Define' (*World Resources Institute,* 8 April 2013) <www.wri.org/blog/2013/04/why-climate-finance-so-hard-define> accessed 8 August 2019.
[19] M Stadelmann, Axel Michaelowa and J Timmons Roberts, 'Difficulties in Accounting for Private Finance in International Climate Policy' (2013) 13(6) Climate Policy 718, 720.
[20] Alexander Zahar, *Climate Change Finance and International Law* (Routledge 2017) 23.
[21] Stadelmann, Michaelowa and Roberts (n 19) 720; Adaptation Watch, 'Toward Climate Finance Reporting Systems in Latin America' (29 September 2017) <www.adaptationwatch.org/#our-publications> accessed 8 August 2019; JT Roberts and R Weikmans, 'Postface: Fragmentation, Failing Trust and Enduring Tensions over what Counts as Climate Finance' (2017) 17(1) International Environmental Agreements 129, 133.
[22] A Falconer and M Stadelman, *What is Climate Finance? Definitions to Improve Tracking and Scale Up Climate Finance* (M Climate Policy Initiative Brief, July 2014) 3.
[23] Zahar (n 20) 51.
[24] Alexander Zahar, 'The Paris Agreement and the Gradual Development of a Law on Climate Finance' (2016) 6 Climate Law 75; Zahar (n 20); Megan Bowman, *Legal Readiness for Public-Private Climate Finance: An Options Paper for UN Environment* (UN Environment, 6 February 2018); Megan Bowman and Katrien Steenmans, *Climate Finance Law: Legal Readiness for Climate Finance* (UN Environment and King's College London 2018); Megan Bowman and Katrien Steenmans, *Legal Readiness for Climate Finance: Private Sector Opportunities* (UN Environment and King's College London 2019).
[25] Zahar, 'The Paris Agreement and the Gradual Development of a Law on Climate Finance' (n 24) 75-76.
[26] Zahar, *Climate Change Finance and International Law* (n 20) 2.
[27] Bowman and Steenmans, *Climate Finance Law* (n 24) 7.

true to how law and regulation for climate finance is manifesting in practice and it embraces legal and financial plurality'.[28] The broader definition also reflects literature that examines the legal perspectives and strategies of climate finance, which generally focuses on particular legal mechanisms and tools,[29] while also incorporating the UNFCCC regime's approach to climate finance in that it needs to come from different sources from the public, private, and in third sectors.[30] Moreover, similar logic applies as the argument for climate change law covering mitigation and adaptation, as well as all levels from sub-national to international level,[31] instead of limiting it to 'the legal obligations that states have taken upon themselves under the climate change regime'.[32] Importantly, climate finance law is not presented as a self-contained regime or a discrete body of law, but instead it is part of climate change law and international environmental law.[33]

2.2. Scoping Review

Scoping reviews 'aim to map *rapidly* the key concepts underpinning a research area and the main sources and types of evidence available',[34] with mapping 'a review that seeks to identify, not results, but linkages'.[35] Daudt and others emphasise that, rather than speed, the purpose of scoping reviews should be to map 'thoroughly and thoughtfully',[36] which is the approach adopted in this article. They are particularly relevant to emerging fields,[37] which climate finance law is,[38] and in which it is unclear what specific questions may be valuably investigated through a more precise and focused systematic review.[39] Their ultimate aim is to

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[28] ibid.

[29] *Eg* Richard B Stewart, Benedict Kingsbury, and Bryce Rudyk (eds), *Climate Finance: Regulatory and Funding Strategies for Climate Change and Global Development* (New York University Press 2009); Joseph E Aldy and Robert N Stavins, 'Using the Market to Address Climate Change: Insights from Theory and Experience' (2012) 141(2) Daedalus, the Journal of the American Academy of Arts and Sciences 45; María V Román, Alberto Ansuategi and Anil Markandya, 'Climate Finance and International Negotiations on Climate Policy' in Anil Markandya, Ibon Galarraga and Dirk Rübbelke, *Climate Finance: Theory and Practice* (World Scientific 2017).

[30] *Eg* UN Decision 1/CP.13 (Bali Action Plan) UN Doc FCCC/CP/2007/6/Add.1, art 1(e); Paris Agreement, art 9.

[31] *Eg* Daniel Bodansky, Jutta Brunnée and Lavanya Rajamani, *International Climate Change* Law (OUP 2017) 10-11.

[32] Zahar, *Climate Change Finance and International Law* (n 20) 51.

[33] Bodansky, Brunnée and Rajamani make this argument about climate change law – see Bodansky, Brunnée and Rajamani (n 31) 11 – and refer to Birnie, Boyle and Redgwell's argument that international environmental law is part of public international law – see Patricia Birnie, Alan Boyle and Catherine Redgwell, *International Law and the Environmnet* (3rd edn, Oxford University Press 2009) 2-4.

[34] Nicholas Mays, Emilie Roberts and Jennie Popay, 'Synthesising Research Evidence' in Naomi Fulop and others (eds), *Studying the Organisation and Delivery of Health Services: Research Methods* (Routledge 2001) 194 (emphasis in original). See also: Zachary Munn and others, 'Systematic Review or Scoping Review? Guidance for Authors when Choosing Between a Systematic or Scoping Review Approach' (2018) 18(143) BMC Medical Research Methodology 1, 2.

[35] I Diane Cooper, 'What is a "mapping study?"' (2016) 104(1) Journal of the Medical Library Association 76, 76.

[36] Helena M L Daudt, Catherine van Mossel and Samantha J Scott, 'Enhancing the Scoping Study Methodology: A Large, Inter-professional Team's Experience with Arksey and O'Malley's Framework' (2013) 13 BMC Medical Research Methodology 48, 56.

[37] Mays, Roberts and Popay (n 34) 194; Danielle Levac, Heather Colquhoun and Kelly O'Brien, 'Scoping Studies: Advancing the Methodology' (2010) 5 Implementation Science 69, 69.

[38] Section 2.1.

[39] Mays, Roberts and Popay (n 34) 194; Hilary Arksey and Lisa O'Malley, 'Scoping Studies: Towards a Methodological Framework' (2005) 8(1) International Journal of Social Research Methodology 19, 20.

inform research agendas, and policy makers and researchers in asking the 'right' questions.[40] The purpose of this particular scoping review is to explore climate finance law in Guyana, and identify potential synergies and tensions with oil exploration and production finance mechanisms, with recommendations as to the specific questions on opportunities and gaps within this context that should be further explored both in research and in practice.

There is no definitive methodology yet for scoping reviews. In this article, the methodological steps as articulated by Arksey and O'Malley[41] and advanced by Levac, Colquhoun and O'Brien[42] are used: (1) identify research question, (2) identify relevant studies, (3) study selection, (4) chart the data, and (5) collate, summarise, and report the results.[43] Table 1 provides a more detailed overview of these stages. Importantly, the review is both structured and limited by the Legal Analytical Framework of Climate Finance Options, described in the next section; the presence or absence of climate finance options, as set out in the Framework, are reviewed within the Guyanese context and used as the structure to collate, summarise, and report results.

[40] Stuart Anderson and others, 'Asking the Right Questions: Scoping Studies in the Commissioning of Research on the Organisation and Delivery of Health Services' (2008) 6(7) Health Research Policy and Systems 7, 16; Heather L Colquhoun and others, 'Scoping Reviews: Time for Clarity in Definition, Methods and Reporting' (2014) 67 Journal of Clinical Epidemiology 1291, 1292; Andrea C Tricco and others, 'A Scoping Review on the Conduct and Reporting of Scoping Reviews' (2016) 16(15) BMC Medical Research Methodology 1, 9; Munn and others (n 34) 2.

[41] Arksey and O'Malley (n 39) 22.

[42] Levac, Colquhoun and O'Brien (n 37).

[43] See Levac, Colquhoun and O'Brien (n 37) 72 and Colquhoun and others (n 40) 1293-1294 for the details of the enhanced methodological steps. The optional stage of consultation is not included.

Stage	Arksey and O'Malley framework stage[44]	Recommended clarification by Levac, Colquhoun and O'Brien[45]	Overview of the stage for the purpose of this article
1,	Identify the research question	Articulate the research question that will guide the enquiry	Identify climate finance law landscape in Guyana, and possible synergies and tensions with oil exploration and production finance options
		Consider purpose of scoping study with the research question	Map landscape of climate finance law options in Guyana and possible identification of tensions with finance mechanisms to support oil exploration and production
		Consider rationale for conducting scoping study	Climate change is a critical issue, with Guyana particularly vulnerable. Significant financial resources are needed to adapt to and mitigate climate change. An overview of existing climate finance options can help identify opportunities and gaps. These need to be considered within the wider context of oil discoveries, which can be considered incompatible with climate mitigation actions
2.	Identify relevant studies	Scope of study	Academic and non-academic literature, including legislation, regulations, policy and strategic documents, news stories, and reports Limiting to options identified by Bowman in the Legal Analytical Framework of Climate Finance Options[46]
		Justify decisions and acknowledge potential limitations to study	The review is not exhaustive as limited by the desk-based literature available. The application of the Framework also predominantly focuses on funding green activities rather than 'greening' brown activities
3.	Study selection	Iterative process involving searching the literature, refining the search strategy, and reviewing articles for inclusion	
4.	Chart data	Develop data-charting form and determine variables to extract	Populate Legal Analytical Framework of Climate Finance Options and identify their legal forms
5.	Collate, summarise, and report the results	Analysis	
		Reporting results and producing outcome	
		Consider meaning of findings as they relate to the overall study purpose; discuss implications for future research, practice and policy	

[44] Arksey and O'Malley (n 39).
[45] Levac, Colquhoun and O'Brien (n 37) 73.
[46] Section 2.3

Table 1. Overview of methodological stages for the scoping review. Steps (3) and (5) are not explained further because the steps articulated by Levac, Colquhoun and O'Brien are those adopted in this research.[47]

2.3. Legal Analytical Framework of Climate Finance Options

The Legal Analytical Framework of Climate Finance Options is adopted to provide the scope and data-charting form for the scoping review. Bowman developed the Framework in 2018 based on extensive analysis of international climate finance law case studies,[48] and it was then validated by Bowman and Steenmans through desk-based research and workshops by applying it within particular national contexts.[49] In particular, workshop delegates – which included government and parliamentary officials, and participants from UN bodies, multilateral financial institutions, private consultancies, and academia – found the Framework to be very valuable and a useful 'tool to help law and policy makers *identify concrete actions* to improve their enabling legal and regulatory environment for climate finance'.[50]

The Framework identifies 'a range of legal and regulatory options that can enable private finance and better leverage public finance at scale for climate change mitigation and adaptation'.[51] These options are divided into two main categories of climate finance: hard 'financial mechanisms', which directly mobilise or leverage finance – such as taxes, guarantees, Clean Development Mechanism (CDM) projects, or public-private partnerships (PPPs) – and 'facilitative modalities', which are 'soft' non-financial mechanisms that indirectly mobilise or leverage finance by enhancing project pipeline, capacity building, and knowledge transfer – such as emissions reporting or climate-related corporate disclosures.[52] Figure 1 sets out the Framework with different categories and examples of both financial mechanisms and facilitative modalities. Further detail on each of the options and how they may incentivise climate financing is discussed when they are reviewed within the Guyanese context in Section 3.

[47] ibid.
[48] Bowman (n 24) 5; Megan Bowman, 'The Investment Plan for European and Climate Governance' in Stephen Minas and Vassilis Ntousas (eds), *EU Climate Diplomacy: Politics, Technology and Networks* (Routledge 2018) 103.
[49] Bowman and Steenmans, *Climate Finance Law* (n 24).
[50] ibid 21 (emphasis in original).
[51] ibid.
[52] Bowman (n 24) 10-11; Bowman, 'The Investment Plan for European and Climate Governance' (n 48) 103.

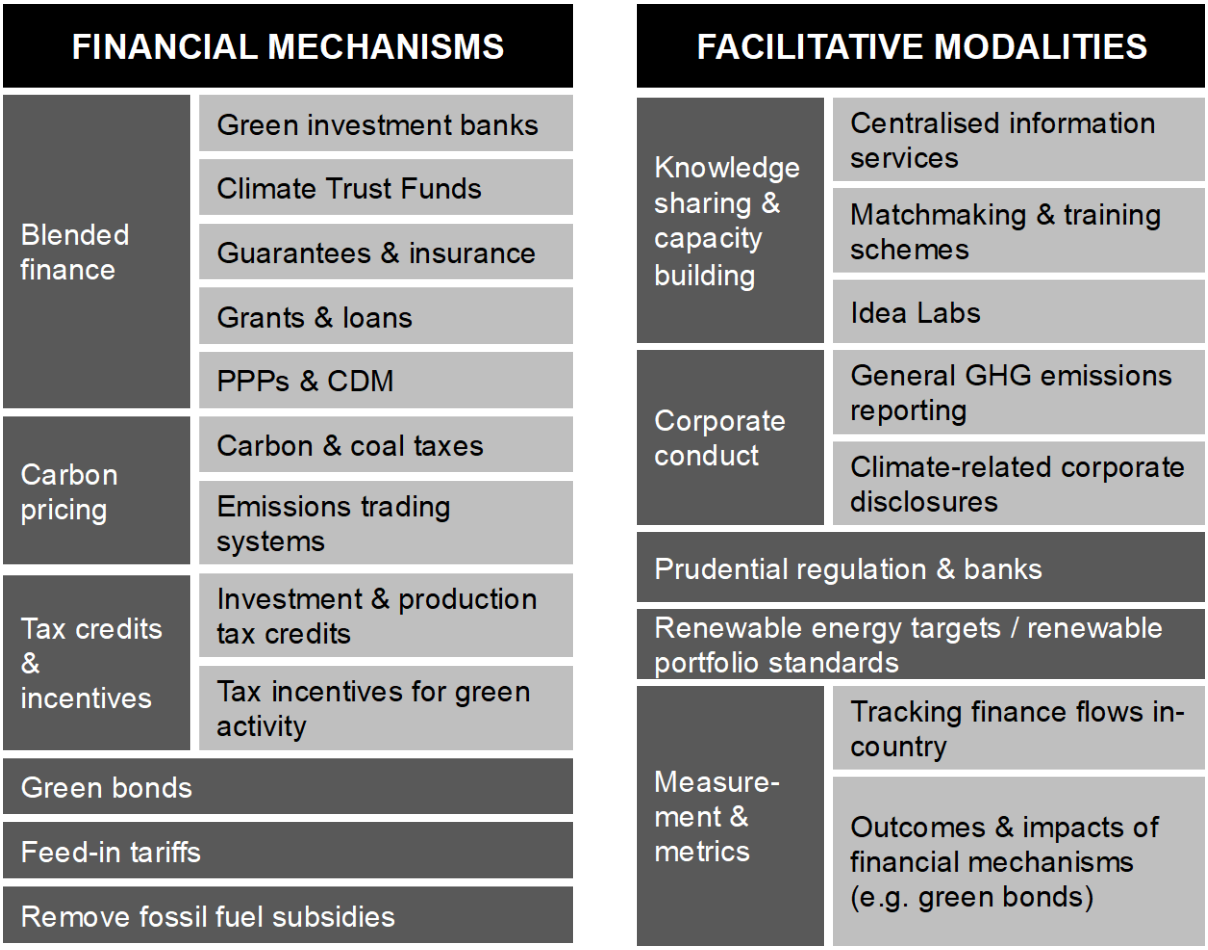

Figure 1. Legal Analytical Framework for Climate Finance. Based on Bowman[53] and adapted from Bowman and Steenmans.[54]

The presence or absence of each of the financial mechanisms and facilitative modalities is reviewed within the Guyanese context through a desk-based review of academic and non-academic literature, including legislation, regulations, policy and strategic documents, news stories, and reports. No case law is discussed as this is one of the general limitations when reviewing Guyanese environmental laws; in Guyana, there is 'very little by way of judicial pronouncement to show any trend in the development of legal norms through judicial precedent. The lack of reported cases exacerbates this problem'.[55] When scoping the specific options, the assumption is not that all mechanisms and modalities need to be present simultaneously to ensure adequate climate financing – and neither in this article nor in the Framework is there an attempt to define what 'adequate' or 'effective' climate finance is – though a mix of both types of options are 'essential and complementary for creating an enabling regulatory environment'.[56]

The Framework recognises that the climate finance options may be implemented through different legal forms. The review therefore identifies the implementation mechanisms and

[53] Bowman (n 24).
[54] Bowman and Steenmans, *Climate Finance Law* (n 24) 15.
[55] Alicia Elias-Roberts, *WWF-Guiana's Project Report on Marine Biodiversity and Forest Governance: Legislative Review of the Environmental Laws of Guyana in Relation to the 2020 CBD Targets* (WWF 2017) 54.
[56] Bowman and Steenmans, *Legal Readiness for Climate Finance* (n 24) 6.

distinguishes between national legislation, regulation, policy and strategic documents, and contracts:[57]

- National legislation covers acts by legislative bodies such as parliament or congress;
- Regulations include subordinate regulations, executive orders, directives, and 'soft law' such as codes, guidances, and rules;
- Contracts constitute agreements enforceable by law; and
- Policy and strategic documents are issued by executive bodies to support implementation of climate finance options, including strategy and action plans. These documents are not always binding, but are included as they often reflect law and policy makers' approach to the other legal forms.

There are some limitations of using the Legal Analytical Framework of Climate Finance Options. The Framework focuses predominantly on 'green finance' and financing 'green' activities. For the purpose of describing this limitation of the Framework, 'green' is broadly understood as financial flows associated with zero- or low-carbon assets or activities. It is, however, noted that in wider scholarly literature and in practice there is no consensus on approaches to defining 'green',[58] but this discussion is beyond the scope of this article. The Framework components of blended finance, tax credits and incentives, green bonds, feed-in tariffs, and all the facilitative modalities are mainly directed at incentivising and financing green activities, with only carbon pricing and the removal of fossil fuel subsidies specifically aimed at disincentivising 'brown' activities (*ie* activities contributing significantly to greenhouse gas emissions). There is, however, increasing focus in practice on 'greening' brown activities. For example, AXA Investment Managers consider there to be a 'significant gap' where investors can deliver 'real impact' for companies that are still financing brown projects, but have the ambition to transition to financing green environmentally-friendly projects in the future, by issuing transition bonds instead.[59] There is scope in the Framework to consider these issues as part of both financial mechanisms and facilitative modalities. For example, the Hewlett Foundation has awarded grants to support proposals to transition towards sustainable retail banking, and, in addition to reporting on green climate financing, the tracking of brown finance (*ie* financial flows toward brown activities and technologies) can be really important in exposing the activities contributing to climate change.[60] As the purpose of this article is as an initial scoping review, this limitation of the Framework is recognised, but the focus is on the general question of climate finance in Guyana and the

[57] Bowman (n 24) 69; Bowman and Steenmans, *Climate Finance Law* (n 24) 16.

[58] *Eg* G Inderst, C Kaminker and F Stewart, 'Defining and Measuring Green Investments: Implications for Institutional Investors' Asset Allocations' (2012) OECD Working Papers on Finance, Insurance and Private Pensions No. 24, 6; Walter Kahlenborn and others, *Defining "Green" in the Context of Green Finance* (European Union 2017) 1.

[59] Yo Takatsuki and Julien Foll, 'Financing Brown to Green: Guidelines for Transition Bonds' *AXA Investment Managers* (*AXA Investment Managers*, 10 June 2019) <https://realassets.axa-im.com/content/-/asset_publisher/x7LvZDsY05WX/content/financing-brown-to-green-guidelines-for-transition-bonds/23818> accessed 18 July 2019.

[60] Hewlett Foundation, 'Request for Proposal: Mobilizing Climate Change Mitigation Capital Through Retail Banking' (*Hewlett Foundation,* 26 March 2018) <https://hewlett.org/request-proposal-mobilizing-climate-change-mitigation-capital-retail-banking> accessed 27 July 2019; Chris Weber and others, *Exploring Metrics to Measure the Climate Progress of Banks* (World Resources Institute, UNEP Finance Initiative and 2 Degrees Investing Initiative 2018) 33. See also: Climate Transparency, *Financing the Transition from Brown to Green: How to Track Country Performance Towards Low Carbon, Climate-resilient Economies* (ODI and HVGP 2017) 24.

particular question of the distribution between legal mechanisms enabling green finance and the greening of brown finance is recommended as an area for further research.[61]

3. Climate Finance Options in Guyana

There is evidence of both financial mechanisms and facilitative modalities implemented in Guyana. These are reviewed below.

3.1. Financial Mechanisms

Table 2 provides an overview of the financial mechanisms implemented in Guyana, which are detailed in subsequent subsections.

[61] David Moher, Lesley Stewart and Paul Shekelle, 'All in the Family: Systematic Reviews, Rapid Reviews, Scoping Reviews, Realist Reviews, and More' (2015) 4 Systematic Reviews 1,1; Jessica Peterson and others, 'Understanding Scoping Reviews: Definition, Purpose, and Process' (2017) 29 Journal of the American Association of Nurse Practitioners 12, 12-13.

FINANCIAL MECHANISMS		PRESENT	EXAMPLES	LEGAL FORM				
				National legislation	Other regulation	Policy & strategic docs	Contract	N/A
Blended finance	Green investment banks	x	No evidence that there is any intention to introduce one	N/A				
	Climate Trust Funds	✓	Environmental Trust Fund	✓				
			REDD+ Investment Fund				✓	
	Guarantees & insurance	x	No evidence that any currently exist, though mechanisms such as Multilateral Investment Guarantee Agency exist to facilitate in future	N/A				
	Grants & loans	✓	Norway and Guyana climate and forest partnership				✓	
			Grants from publicly and privately EU funded Caribbean Investment Facility				✓	
	PPPs & CDM	✓	Public-Private Partnership (PPP) Policy Framework			✓		
			Guyana Skeldon Bagasse Cogeneration				✓	
Carbon pricing	Carbon & coal taxes	x	Has been previously proposed but never progressed	N/A				
	Emissions trading systems	x	No intention to implement	N/A				
Tax credits & incentives	Investment & production tax credits	x	No evidence that there is any intention to introduce one	N/A				
	Tax incentives for green activity	✓	Tax holidays for up to ten years for certain renewable energy activities creating employment	✓				
			Removal of import duty & tax barriers for renewable energy equipment & other technologies imports	✓				
Green bonds		x	No evidence that there is any intention to introduce these	N/A				
Feed-in tariffs		x	None currently exist, but there is a proposal to develop them in the draft *National Energy Policy of Guyana*	N/A				
Remove fossil fuel subsidies		x	Fossil fuels continue to be subsidised	N/A				

Table 2. Non-exhaustive overview of presence (✓) or absence (x) of financial mechanisms in Guyana.

3.1.1. Blended Finance

Blended finance combines public and private finance, typically involving the use of public financial resources to increase private sector investment.[62] It includes mechanisms such as green investment banks, climate trust funds, guarantees and insurance, grants and loans, and PPPs and CDM, which are all reviewed in turn within the Guyanese context below.

In-country climate trust funds are often set up in developing countries as independent governance structures that meet high-level transparency and inclusiveness standards in order to receive funds through international finance and from domestic budgets and the private sector.[63] Guyana has at least two examples of these: the Environmental Trust Fund and the Guyana REDD+ Investment Fund (GRIF).

The Environmental Protection Act[64] set up the Environmental Trust Fund. The Fund's purpose includes:

> (a) protecting the environment and conserving natural resources;
> (b) incentive measures for reducing environmental pollution;
> (c) public awareness and education programmes to enhance the understanding of environmental protection and natural resources management issues within Guyana.[65]

Although the above does not explicitly mention climate change, clearly climate action can protect the environment, reduce pollution, and requires public awareness and education.[66] Resources of the Fund can comprise private and public resources – section 60 of the Act provides that it includes Parliament-allocated sums; loan funds from the Environmental Protection Agency; sums provided by foreign states, international organisations, multilateral or bilateral lending agencies, private individuals, foundations, or corporations; revenue obtained as a result of the Act; and grants, subsidies, bequests, donations or gifts to the Environmental Protection Agency.

The GRIF was set up for the purpose of receiving funds as a result of a climate and forest partnership signed by Guyana and Norway in November 2009.[67] The partnership was initially

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[62] Eg Robyn Clark, James Reed and Terry Sunderland, 'Bridging Funding Gaps for Climate and Sustainable Development: Pitfalls, Progress and Potential of Private Finance' (2018) 71 Land Use Policy 335, 338; Naeeda C Morgado and Jens Sedemund, *Blending Finance for Climate and Poverty* (OECD 2018) 2.

[63] Alastair Marke and Bianca Sylvester, 'Decoding the Current Global Climate Finance Architecture' in Alastair Marke (ed), *Transforming Climate Finance and Green Investment with Blockchains* (Academic Press 2018) 39.

[64] Environmental Protection Act, Cap. 20:05 (Act 11 of 1996).

[65] ibid s 58.

[66] Eg Richard J Bord, Robert E O'Connor and Ann Fisher, 'In What Sense does the Public Need to Understand Global Climate Change?' (2000) 9(3) Public Understanding of Science 205; V Ramanathan and Y Feng, 'Air Pollution, Greenhouse Gases and Climate Change: Global and Regional Perspectives' (2009) 43(1) Atmospheric Environment 37; Susanne C Moser and Lisa Dilling, 'Communicating Climate Change: Closing the Science-action Gap' in John S Dryzek, Richard B Norgaard and David Schlosberg (eds), *The Oxford Handbook of Climate Change and Society* (OUP 2011).

[67] Government of Norway, 'Guyana and Norway enter into Partnership to Protect Guyana's Tropical Forests' (*Government of Guyana,* 9 November 2009) <www.regjeringen.no/no/dokumentarkiv/stoltenberg-ii/md/Nyheter-og-pressemeldinger/pressemeldinger/2009/guyana-and-norway-enter-into-partnership/id584989/?id=584989> accessed 16 July 2019; Governments of Norway and Guyana, 'Joint Concept Note on REDD+ Cooperation between Guyana and Norway' (*Government of Guyana*, 2009) <www.regjeringen.no/globalassets/upload/md/vedlegg/klima/klima_skogprosjektet/joint-concept-note-final-

intended to last until the end of 2015, but is currently being continued based on annual approval by the Norwegian Minister of Climate and Environment. The partnership arrangement is unique because Norway pays Guyana for its avoided deforestation, based on independent verification of Guyana's deforestation and forest degradation rates and progress on REDD+ (reducing emissions from deforestation and forest degradation in developing countries, and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries) enabling activities.[68] GRIF was set up through an Administrative Agreement between Norway and the World Bank's International Development Association, the Trustee of the GRIF.[69] The partnership highlights the overlaps that exist between financial mechanisms in the Legal Analytical Framework of Climate Finance Options as it is also an example of a grant from Norway to Guyana.

Guarantees and insurance instruments are two of the most common types of risk underwriting tools. Guarantees are agreements or commitments that if a debtor borrows from a lender and agrees to repay the loan over a certain amount of time (with interest), then the guarantor commits to fulfil the terms of the original loan contract to the lender even if the debtor does not repay the loan on time and in full.[70] Insurance policies are contracts issued by a third party agreeing to make a payment in the event of a particular event happening.[71] They differ in that guarantees relate to non-performance in relation to a specific transaction whereas insurance provisions for a loss caused by unexpected events, and insurance is often more standardised whereas guarantees are tailored to individual characteristics of each transaction.[72] Both in essence cover investors and lenders against perceived risks including the risks of expropriation, currency inconvertibility, war and civil disturbance, breach of contract, and failure to honour financial obligations.[73] Both guarantee, and insurance instruments can therefore make development projects more commercially viable by reducing the risk profile of the investment and overall capital costs; typically not requiring immediate disbursement of capital; and only requiring funding when called, which only happens in a portion of cases.[74]

There is no evidence of guarantee and insurance instruments currently being used for climate change mitigation or adaptation projects in Guyana. Since 2015, the Multilateral Investment Guarantee Agency (MIGA), an international financial institution which offers political risk insurance and credit risk enhancement guarantees for cross-border private sector investors and lenders, has made climate action one of its priority areas.[75] In 2016, MIGA stated it

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version-13-november-2009.pdf?id=2301155> accessed 16 July 2019. See also: Frankfurt School – UNEP Collaborating Centre for Climate & Sustainable Energy Finance, *Case Study: Guyana REDD-plus Investment Fund (GRIF)* (Frankfurt School of Finance & Management 2012).

[68] Guyana Low Carbon Development Strategy, 'Guyana REDD+ Investment Fund (GRIF): Fact Sheet' (2010) <www.lcds.gov.gy/index.php/documents/guyana-redd-investment-fund-grif> accessed 20 July 2019.

[69] Frankfurt School – UNEP Collaborating Centre for Climate & Sustainable Energy Finance (n 67) 13 and 16

[70] Chris Humphrey and Annalisa Prizzon, *Guarantees for Development: A Review of Multilateral Development Bank Operations* (ODI 2014) 10.

[71] OECD, *Blended Finance Vol. 1: A Primer for Development Finance and Philanthropic Funders* (World Economic Forum 2015) 17.

[72] Humphrey and Prizzon (n 70) 10.

[73] African Development Bank, the Asian Development Bank, the European Bank for Reconstruction and Development, the European Investment Bank, the Inter-American Development Bank Group, the Islamic Development Bank and the World Bank Group, *2018 Joint Report on Multilateral Development Banks' Climate Finance* (European Bank for Reconstruction and Development 2019) 22.

[74] OECD (n 71) 17.

[75] MIGA, 'Our Impact: Climate Change' (2019) <www.miga.org/climate-change> accessed 23 July 2019.

would 'look to support productive investment projects through its political risk guarantees as relevant opportunities emerge' in Guyana,[76] but none have yet emerged.[77]

There are examples of grants and loans for climate action in Guyana. Grants are funds that do not need to be repaid, whereas loans require repayment. Grants therefore often have stricter restrictions in relation to the use of funds in comparison to loans, though loans also have restrictions. Both can again be used to leverage private investment, for example, by combining grants with loans and equities from public and private sources, including bilateral and multilateral development banks.[78] For example, the European Union (EU) and its Member States have established the Caribbean Investment Facility, which is a blending facility that covers the Caribbean region, including Guyana, and combines grant funding from the European Development Fund with public and private resources, such as loans from EU and regional financial institutions.[79] So far, two Guyanese projects have received support: (1) a programme aimed at strengthening the operational efficiency and corporate management capacity of Guyana Power and Light Inc (GPL), that will also help prepare GPL to develop and manage renewable energy projects,[80] and (2) a programme that will finance the rehabilitation of part of the infrastructure of the water supply network and improved sanitation services.[81] Additionally, as previously mentioned, the climate and forest partnership that set up GRIF is also an example of a grant from Norway to Guyana.

PPPs are a form of blended finance as a result of a long-term contract between a private party and public sector entity, in which usually a public sector entity provides remuneration to a private party for supplying a public asset or service while also bearing significant risk and management responsibility.[82] In 2018, the Government of Guyana published its Public-Private Partnership (PPP) Policy Framework.[83] The Framework is part of the Government's programme to create appropriate policy, institutional, and legal frameworks for local and external private sector stakeholders to engage meaningfully with the Government to achieve economic development. It provides a structured platform and guiding principles, and encourages PPPs to be used to deliver new assets and services in priority infrastructure

[76] The World Bank Group, 'International Development Association, International Finance Corporation, and Multilateral Investment Guarantee Agency Country Engagement Note for the Cooperative Republic of Guyana for the Period FY16-18' (23 March 2016) Report No 94017-GY, 17 <http://documents.worldbank.org/curated/en/945941467999118138/pdf/94017-REVISED-Box394888B-OUO-9-IDA-R2016-0055-2.pdf> accessed 23 July 2019.

[77] Only one project in Guyana has received two reinsurance contracts (against risks of currency transfer, expropriation, and war and civil disturbance) from MIGA: to construct and operate an open-pit gold mine to contribute to Guyana's export earnings in 1991 (so no longer active). This was thus not a climate mitigation or adaptation project. MIGA, 'Omai Gold Mines Ltd' (2019) <www.miga.org/project/omai-gold-mines-ltd> accessed 23 July 2019.

[78] European Commission, 'International Climate Finance' (2019) <https://ec.europa.eu/clima/policies/international/finance_en> accessed 20 July 2019.

[79] European Commission, 'Caribbean Investment Facility' (2019) <https://ec.europa.eu/europeaid/regions/latin-america/caribbean-investment-facility_en> accessed 20 July 2019.

[80] European Commission, 'Power Utility Upgrade Programme' (2019) <https://ec.europa.eu/europeaid/blending/power-utility-upgrade-programme_en> accessed 20 July 2019.

[81] European Commission, 'Water and Sanitation Infrastructure Improvement Program' (2019) <https://ec.europa.eu/europeaid/blending/water-and-sanitation-infrastructure-improvement-program_en> accessed 20 July 2019.

[82] OECD (n 71) 8; The World Bank, *Public-Private Partnerships Reference Guide* (The World Bank 2017) 1. See also: United Nations, *Addis Ababa Action Agenda of the Third International Conference on Financing for Development* (United Nations 2015) para 48.

[83] Cooperative Republic of Guyana, *Public-Private Partnership (PPP) Policy Framework* (Cooperative Republic of Guyana 2018).

sectors, including renewable energy sectors and in particular hydro plants.[84] The forms of PPPs covered by the Framework range from very low private sector participation (*eg* a contract to build an asset but the public sector still owns and operates the asset) to full divesture by the public sector to a licensed, regulated energy distribution company (*eg* where private sector owns and operates assets).[85]

CDM is an international mechanism that enables PPPs.[86] It is defined by Article 12 the Kyoto Protocol to the UNFCCC;[87] in brief, the CDM allows a country with an emission reduction or limitation commitment under the Kyoto Protocol to benefit from emission-reduction projects in developing countries in order to earn saleable certified emission reduction credits, which can be counted towards meeting Kyoto targets. CDM therefore does not represent the usual financial flows of PPPs of public entities remunerating private entities, but instead various sources of private and public capital can be raised for developing country private or public sector entities acting as project hosts.[88] Currently, the future of the CDM is uncertain. In theory it could remain operational indefinitely, though there is already declining interest in the mechanism.[89] Moreover, some Parties agree that it would be inefficient to have the CDM running indefinitely and in parallel with the Article 6.4 mechanism set out in the Paris Agreement.[90] The experiences, both in terms of successes and failures, gained from CDM are nonetheless invaluable as it is likely to inspire and inform whatever similar tools are adopted under Paris Agreement.[91]

There has only been one credited CDM project in Guyana: the Guyana Skeldon Bagasse Cogeneration Project between May 2008 and 2017.[92] This project comprised adding a more efficient bagasse-powered co-generation plant to the Skeldon Sugar Modernization Project. Bagasse is a renewable fuel resource, that is a residue in the sugarcane process, and replaces

[84] ibid 6 and 12.
[85] ibid 9.
[86] Richard Stewart and others, *The Clean Development Mechanism: Building International Public-Private Partnerships under the Kyoto Protocol* (United Nations 2000) UNCTAD/GDS/GFSB/Misc.7, 1; Charlotte Streck, 'New Partnerships in Global environmental Policy: The Clean Development Mechanism' (2004) 13(3) Journal of Environment & Development 295, 313; Peter Newell and Matthew Paterson, *Climate Capitalism: Global Warming and the Transformation of the Global Economy* (Cambridge University Press 2010) 29.
[87] Kyoto Protocol to the United Nations Framework Convention on Climate Change (Kyoto, 11 December 1997; in force 16 February 2005).
[88] Stewart and others (n 86) 55; Gudrun Benecke and others, 'From Public-Private Partnership to Market: The Clean Development Mechanism (CDM) as a New Form of Governance in Climate Protection' (2008) SFB-Governance Working Paper No. 10, 13 <https://refubium.fu-berlin.de/bitstream/handle/fub188/19185/sfbgov_wp10_en.pdf?sequence=1&isAllowed=y> accessed 21 July 2019.
[89] Climate Focus, 'What is the Future of the CDM? Question and Answers' (June 2017) 1 <https://climatefocus.com/sites/default/files/Post-2020%20CDM%20QA%20Briefing%20Note.pdf> accessed 9 August 2019.
[90] ibid.
[91] Anthony Mansell, 'What's Ahead for Carbon Markets after COP21?' (2016) 10(1) BIORES 16, 18-19; Asian Development Bank, *Decoding Article 6 of the Paris* Agreement (ADB 2018) 24; UNFCCC, 'CDM Can Inspire, Inform, Outfit Any New Mechanism under Paris Agreement' *UN Climate Change News* (3 May 2018) <https://unfccc.int/news/cdm-can-inspire-inform-outfit-any-new-mechanism-under-paris-agreement> accessed 21 July 2019; Axel Michaelowa and Sonja Butzengeiger, *Ensuring Additionality under Art. 6 of the Paris Agreement* (Perspectives 2017) 5; Karen Holm Olsen, Christof Arens and Florian Mersmann, 'Learning from CDM SD Tool Experience for Article 6.4 of the Paris Agreement' (2018) 18(4) Climate Policy 383, 384.
[92] UNFCCC, 'Project 1458: Guyana Skeldon Bagasse Cogeneration Project' (2019) <https://cdm.unfccc.int/Projects/DB/SGS-UKL1196357091.25/view> accessed 12 May 2019.

light fuel oil in diesel engine-driven generators. The total project cost was USD 32.2 million.[93] Project participants included Spain, Denmark, and Italy.[94]

Finally, there is no evidence that a green investment bank has been considered within the Guyanese context. The OECD defines green investment banks as

> a publicly capitalised entity established specifically to facilitate and attract private investment into domestic [low-carbon and climate-resilient] infrastructure and other green sectors such as water and waste management through different activities and interventions.[95]

This highlights that their particular purpose is to incentivise climate financing. They can be established at national, state, county, and city levels.[96] They have typically been established in developed countries, but there is increasing interest in creating them in developing countries,[97] though Guyana has not yet publicly expressed or announced such an interest.

3.1.2. Carbon Pricing

According to the Grantham Research Institute on Climate Change and the Environment, carbon pricing 'should be a fundamental pillar of policies designed to mitigate climate change', even though they are not always popular with businesses and consumers.[98] A carbon price aims to encourage polluters to reduce the amount of greenhouse gases they emit by applying a cost to carbon pollution. This can be through a carbon tax, applied explicitly (*ie* applied to greenhouse gas emissions) or implicitly (*eg* energy taxes or fuel taxes),[99] or a cap-and-trade system where emissions per country, region, or sector are capped.

No mechanisms for pricing carbon have been implemented in Guyana; there is neither an emissions trading system nor a carbon or coal tax. There is currently no plan of developing an emissions trading system, as it is not expected that Guyana would financially benefit from carbon trade. The reasons provided include: (1) the Norway and Guyana climate and forest partnership pays for avoided deforestation; (2) private trading markets only pay for reduced emissions; and (3) Guyana is a unique country possessing high forest cover and a low deforestation rate.[100] This is reiterated in Guyana's (revised) NDC, which states that 'Guyana

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[93] CDM Executive Board, *Clean Development Mechanism Project Design Document Form (CDM-PDD) Version 03 – in effect as of: 28 July 2006* (CDM Executive Board and UNFCCC 2006) 2 <https://cdm.unfccc.int/filestorage/V/S/S/VSSDFHR8560V4TR0RMYXNTUCO02LMO/Revised%20PDD%20version%203.pdf?t=WDh8cHJkdm56fDD59fyxtUxmMC0VzyZNIwxG> accessed 12 May 2019.

[94] See UNFCCC (n 92) for a complete list of parties involved.

[95] OECD, *Green Investment Banks: Scaling up Private Investment in Low-carbon, Climate-resilient Infrastructure* (OECD 2016) 18.

[96] ibid 15.

[97] Bowman (n 24) 21.

[98] Grantham Research Institute on Climate Change and the Environment, *The Case for Carbon Pricing* (LSE 2011) 1.

[99] Barbara Buchner and others, 'The Landscape of Climate Finance' in Erik Haites (ed), *International Climate Finance* (Routledge 2013) 17.

[100] Stacy Carmichael, 'Carbon Trading Not a Viable Option for Climate Financing' (*Department of Public Information,* 3 August 2018) <https://dpi.gov.gy/carbon-trading-not-a-viable-option-for-climate-financing-gfc-rep> accessed 10 May 2019; Newsroom, 'Guyana Unlikely to Benefit from Carbon Trading' *Newsroom* (3 August 2018) <https://newsroom.gy/2018/08/03/guyana-unlikely-to-benefit-from-carbon-trading> accessed 12 July 2019.

does not currently see viable opportunities in carbon trading markets; however this does not preclude participation in green consumer markets at all levels'.[101]

In contrast, a carbon tax was reportedly advocated in 2009 by former President of Guyana, Bharrat Jagdeo,[102] and considered again by the government in 2015 according to the Minister of Natural Resources, Raphael Trotman.[103] This has, however, not progressed and Jagdeo has since expressed his opposition to a carbon tax, as it would be a cost barrier to doing business.[104]

3.1.3. Tax Credits and Incentives

Investment tax credits are one-off incentives that allow individuals or entities to claim a tax credit up to a specified percentage of their project's capital costs. In the United States, for example, a federal income tax exists for certain types of renewable energy projects including solar, geothermal, and fuel cell energy.[105] Production tax credits are a form of financial support; they are an income tax credit for the production of energy. Again, the United States has introduced production tax credits for wind energy, and these have resulted in an increase in supply of wind power for the United States.[106] There are currently no investment and production tax credits implemented in Guyana in relation to renewable energy, and there is also no evidence of a plan to implement such incentives.

Possible tax incentives for green activity do exist in Guyana in the form of tax holidays that can be granted for a period of up to ten years.[107] Tax holidays, which provide an exemption from corporation tax, can be granted for activities creating new employment in the field of 'infrastructural development, including the production of electricity using renewable sources of energy'.[108] Additionally, though not strictly a tax incentive, some of the potential tax barriers to green activities have been removed; there has been the removal of import duty and tax barriers for renewable energy equipment and other technologies imports in Customs (Amendment) Act[109] and Value-Added Tax Act.[110]

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[101] Government of Guyana, 'Guyana's Revised Intended Nationally Determined Contribution' (20 May 2016) 6 <www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Guyana%20First/Guyana's%20revised%20NDC%20-%20Final.pdf> accessed 12 July 2019.

[102] Guyana Chronicle. 'CARICOM moves on Guyana's Carbon Tax Proposal' *Guyana Chronicle* (16 June 2009) <http://guyanachronicle.com/2009/06/16/caricom-moves-on-guyanas-carbon-tax-proposal> accessed 12 July 2019.

[103] Kaieteur News, 'Any Tax Similar to a Carbon Tax Does Not Make Sense – Opposition Leader' *Kaieteur News* (14 November 2015) <www.kaieteurnewsonline.com/2015/11/14/any-tax-similar-to-a-carbon-tax-does-not-make-sense-opposition-leader> accessed 19 July 2019; Kaieteur News, 'Carbon Tax can Cripple Local Producers – Opposition Leader' *Kaieteur News* (1 December 2015) <www.kaieteurnewsonline.com/2015/12/01/carbon-tax-can-cripple-local-producers-opposition-leader> accessed 19 July 2019.

[104] ibid.

[105] 26 U.S. Code Title 26 – Internal Revenue Code, §48.

[106] Eg Merrill Jones Barradale, 'Impact of Public Policy Uncertainty on Renewable Energy Investment: Wind Power and the Production Tax Credit' (2010) 38 Energy Policy 7098; Xi Lu and others, 'The Impact of Production Tax Credits on the Profitable Production of Electricity from Wind in the U.S.' (2011) 39 Energy Policy4207; Travis Roach, 'The Effect of the Production Tax Credit on Wind Energy Production in Deregulated Electricity Markets' (2015) 127 Economics Letters 86

[107] Income Tax (In Aid of Industry) Act, Cap. 81:02 (Act 16 of 1951), s 2(1A).

[108] ibid, s 2(1)(b)(x).

[109] Customs (Amendment) Act, Cap. 82:01 (Act 2 of 2017).

[110] Value-Added Tax Act, Cap. 81:05 (Act 10 of 2005).

The government in its draft National Energy Policy of Guyana – Green Paper,[111] which will update the 1994 National Energy Policy of Guyana,[112] intends to introduce tax incentives aimed at residential customers, commercial entities, and developers to encourage the wide spread deployment of small, medium, and large scale renewable energy technologies, such as tax rebates that reduce the taxable income of purchasers by the costs of the technology.[113] No timelines are indicated for the implementation of such tax incentives, and there is no evidence that discussions on possible incentives have developed further.

3.1.4. Green Bonds

Green bonds are 'debt instruments used to finance green projects that deliver environmental benefits', [114] where green often refers to environmentally-friendly projects such as renewables, water and energy efficiency, bioenergy, and low carbon transports.[115] There is currently no liquid domestic bond market in Guyana (though a return has been considered)[116] and no evidence that green bonds have been considered within the Guyanese context. This reflects the situation in many developing countries, as the green bond 'market remains incipient, and its full potential seems to be underappreciated',[117] though there is an increasing demand.[118] There are still a number of barriers to the developing a green bond market in developing countries such as Guyana: institutional barriers (including lack of technical skills required to ensure that projects are implemented in accordance with the Green Bond Principles, the globally most widely accepted standards; lack of knowledge of existing international practices in green bond transactions; and inappropriate institutional arrangements in some developing countries) and market barriers (issue of minimum size, currency of issuance, high transaction costs associated with green bond issuance).[119]

3.1.5. Feed-in Tariffs

Feed-in tariffs are mechanisms designed to promote the rapid development and uptake of renewable energy sources; they are in essence guaranteed payments to energy producers for the renewable electricity they generate.[120] The government in its draft National Energy Policy of Guyana intends to develop a fixed price feed-in tariff regime with anticipated maximum

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[111] Roland Clarke, 'Draft National Energy Policy of Guyana – Report 2 – Green Paper' (2017) <www.electricity.gov.gy/HECI_Docs/Report2_GY_EnergyPolicy_Feb20_17.pdf> accessed 20 July 2019.
[112] The National Energy Policy committee, *Energy Policy of Guyana* (Government of Guyana 1994).
[113] Clarke (n 111) 16.
[114] OECD and others, *Green Bonds: Country Experiences, Barriers and Options* (G20 GFSG 2016) 4. See also: Climate Bonds Initiative and UNEP Inquiry, *Scaling up Green Bond Markets for Sustainable Development* (Climate Bonds Initiative and UNEP Inquiry 2015); OECD, *Green Finance and Investment: Mobilising Bond Markets for a Low-Carbon Transition* (OECD 2017).
[115] Emanuele Campiglio, 'Beyond Carbon Pricing: The Role of Banking and Monetary Policy in Financing the Transition to a Low-carbon Economy' (2016) 121 Ecological Economics 220, 220; Josué Banga, 'The Green Bond Market: A Potential Source of Climate Finance for Developing Countries' (2019) 9(1) Journal of Sustainable Finance & Investment 17, 18. See also text to n 58.
[116] Lucien Chauvin, 'Guyana Poised to Return to Bond Market after Two Decade Gap' (*GlobalCapital,* 11 October 2015) <www.globalcapital.com/article/yvxxmx2y5mcx/guyana-poised-to-return-to-bond-market-after-two-decade-gap> accessed 23 July 2019; IMF, *Guyana: Staff Report for the 2018 Article IV Consultation – Debt Sustainability Analysis* (IMF 2018) 5.
[117] Banga (n 115) 19.
[118] Olaf Weber and Vasundhara Saravade, *Green Bonds: Current Development and Their Future* (Centre for International Governance Innovation 2019) 8.
[119] Banga (n 115) 24-27.
[120] Eg Toby Couture and Yves Gagnon, 'An Analysis of Feed-in Tariff Remuneration Models: Implications for Renewable Energy Investment' (2010) 38 Energy Policy 955, 955.

time limits between 10 and 20 years to 'enhance the bankability of the renewable energy projects and to provide for a reasonable return to householders and investors'.[121] No timeline is stipulated in the draft.[122]

3.1.6. Removal of Fossil Fuel Subsidies

Fossil fuels continue to be subsidised in Guyana.[123] It is unlikely that this will change soon as the Minister of Finance in Guyana asserted in January 2019 that fossil fuel subsidies are not the enemy of the green economy: 'From a developing country aspect, it is not easy to remove subsidies that are targeting the poor in developing countries'.[124]

3.2. Facilitative Modalities

Table 3 provides an overview of the facilitative modalities implemented in Guyana, which are detailed in subsequent subsections.

[121] Clarke (n 111) 28.
[122] ibid.
[123] Section 4.1.3.
[124] Carin Smith, 'Fossil Fuel Subsidies are the Enemy of the Green Economy – Minister' *fin24* (16 January 2019) <www.fin24.com/Economy/fossil-fuel-subsidies-are-the-enemy-of-the-green-economy-minister-20190116-2> accessed 20 July 2019.

FACILITATIVE MODALITIES		PRESENT	EXAMPLES	LEGAL FORM				
				National legislation	Other regulation	Policy & strategic docs	Contract	N/A
Knowledge sharing & capacity building	Centralised information services	x	None currently exist, but there is an intention to develop permanent capacity for providing information to end-users in *Climate Resilience Strategy and Action Plan* (CRSAP)	N/A (if developed as part of CRSAP then a policy & strategic doc)				
	Matchmaking & training schemes	✓	'Climate finance for agriculture in Guyana' workshop					✓
			'Capacity Building of the National Designated Authority (NDA) and Preparation of the Country Strategic Framework of the Cooperative Republic of Guyana' programme					✓
	Idea Labs	x	No evidence	N/A				
Corporate conduct	General GHG emissions reporting	x	No evidence	N/A				
	Climate-related corporate disclosures	x	No evidence	N/A				
Prudential regulation & banks		x	No evidence	N/A				
Renewable energy targets & renewable portfolio standards		✓	100% reliant on renewable energy by 2025 set out in its NDC, though this target is expected to be revised			✓		
Measurement & metrics	Tracking finance flows in-country	✓*	No central mechanism but this is required for some financial mechanisms	Legal form depends on the particular mechanism				
	Outcomes & impacts of financial mechanisms	✓*	No central mechanism but this is required for some financial mechanisms (legal form depends on the particular mechanism)	N/A				

Table 3. Non-exhaustive overview of facilitative modalities in Guyana: present (✓), absent (x), present in certain circumstances (✓*).

3.2.1. Knowledge Sharing and Capacity Building

The Government of Guyana recognises that knowledge sharing and capacity building is required:

> [Guyana] needs to further develop capacity that will allow for the design and implementation of effective policy frameworks across sectors that will support efforts

> to exploit the country's mitigation potential through both public and private sector projects. This includes development and capacity building for institutions, and *fostering the capacity and knowledge* of private sector actors, including financial intermediaries.[125]

Suggestions by the Government to support capacity building include formulating a capacity-building action plan that will include activities to promote awareness raising, data collection and management, and dissemination of information.[126] This has not yet been formulated.

Further information is required for better decision-making,[127] including on climate finance. Relevant and suitable information can, for example, enhance effectiveness of climate finance and establish a more reliable framework to measure, report, and verify climate finance flows, which in turn is critical for improving transparency, accountability, and effectiveness of international action.[128] Though once centralised information is available, there are questions in relation to the disconnect that persists between information and decision-making.[129]

The current informational capacity in Guyana has been described as 'sporadic in nature',[130] with the Government of Guyana identifying the need to upgrade its limited human informational capacity in its draft *Climate Resilience Strategy and Action Plan* (CRSAP).[131] The CRSAP aims to provide a roadmap for the next five years, identifies four priority climate resilience programmes for which funding proposals can be developed and submitted, summarises the most significant climate risks and required resilience actions across 15 key sectors, identifies a set of capacity building actions, and formulates a strategy to finance the CRSAP.[132] In the CRSAP, it is recognised that there is a need to develop permanent capacity for generating, collating, and disseminating climate projections and a comprehensive suite of vulnerability, risk, and adaptation assessments for providing information to end-users.[133] Currently the main centralised information service is the Hydrometeorological Service in Guyana, which observes, archives, and understands Guyana's weather and climate,[134] but there is none in relation to climate finance, such as a register of climate vulnerabilities and risks facing the public and private sector that may affect budgeting and investment strategies.

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[125] Government of Guyana, *Guyana: Second National Communication to the UNFCCC* (Government of Guyana 2012) 147 (emphasis added).
[126] ibid.
[127] Daniel Sarewitz and Roger A Pielke Jr, 'The Neglected Heart of Science Policy: Reconciling Supply of and Demand for Science' (2007) 10 Environmental Science & Policy 5, 6; John Tribbia and Susanne C Moser, 'More than Information: What Coastal Managers Need to Plan for Climate Change' (2008) 11 Environmental Science & Policy 315, 317.
[128] Barbara Buchner, Jessica Brown, and Jan Corfee-Morlot, 'Monitoring and Tracking Long-term Finance to Support Climate Action' (2011) Climate Change Expert Group Paper No. 2011(3), 12-13 <www.oecd-ilibrary.org/docserver/5k44zcqbbj42-en.pdf?expires=1565009045&id=id&accname=guest&checksum=8DECA013C7D37D7E3AA7C1609876732D> accessed 5 August 2019; Barbara Buchner and others, *The Landscape of Climate Finance: A CPI Report* (Climate Policy Initiative 2011) 52.
[129] Tribbia and Moser (n 127) 316.
[130] UNDP, *National Adaptation Plan Guyana: Japan-Caribbean Climate Change Partnership (J-CCCP) Inception Report* (UNDP 2017) 19.
[131] Government of Guyana, *Climate Resilience Strategy and Action Plan for Guyana – Draft for Consultation* (Government of Guyana 2015) 13.
[132] ibid 1-2.
[133] ibid 13-14.
[134] Ministry of Agriculture, 'Hydrometeorological' (2019) <https://agriculture.gov.gy/hydrometeorological> accessed 5 August 2019.

There is some evidence of sector-specific initiatives for matchmaking and training, which can be considered as a form of structured dialogue that brings together representatives of different groups of stakeholders, such as civil society, and the public and private sectors.[135] The Caribbean Community Climate Change Centre has recently implemented a new programme: Capacity Building of the National Designated Authority (NDA) and Preparation of the Country Strategic Framework of the Cooperative Republic of Guyana. The purpose of this programme is to build and strengthen institutional capacity to engage with the Green Climate Fund (GCF). The GCF is a financial mechanism established within the framework of the UNFCCC that helps fund climate finance investment in low-emission, climate-resilient development in developing countries. In particular, the programme helps businesses, NGOs and government agencies apply for funding from the GCF.[136]

Another initiative where training and engaging various stakeholders was the focus is the workshop on 'Climate finance for agriculture in Guyana' convened by the Office of Climate Change of the Ministry of the Presidency of Guyana in partnership with the Technical Centre for Agricultural and Rural Cooperation in July 2019.[137] The purpose of this workshop was to engage different stakeholders, including officials from the Ministries of Environment, Agriculture and Rural Development, Finance and Economic Planning, as well as representatives from farmers' organisations, the commercial banking sector, agro-allied businesses, NGOs, and development organisations to discuss and identify key options to promote climate finance for agriculture in general and climate smart agriculture in particular in Guyana.[138]

Neither the programme nor workshop were the result of a particular legal form, but were initiatives and coalitions by other organisations. These are therefore not examples of climate finance law in themselves, but instead can contribute to the development of an enabling environment for creating climate finance law.

Idea labs are collaborative schemes made to generate new ideas for mobilising climate finance.[139] There are no examples of such labs existing in Guyana. Arguably the workshop on 'Climate finance for agriculture in Guyana' had elements of an idea lab, as part of the purpose was to discuss options for promoting climate finance, though it would not be wholly considered an idea lab as idea labs aim to develop innovative financial instruments. The Global Innovation Lab for Climate Finance is a global public-private sector initiative that identifies, designs, and pilots innovative climate finance instruments to unlock private

[135] Bowman (n 24) 43; Bowman and Steenmans, *Climate Finance Law* (n 24) 18-19.
[136] Green Climate Fund, 'Readiness Proposal with FAO for Republic of Guyana' (31 July 2017) <www.greenclimate.fund/documents/20182/466992/Readiness_proposals_-_Guyana___FAO___Entity_Support_and_Strategic_Frameworks.pdf/675801d3-0984-fe17-d089-c7cf23f373f8> accessed 16 July 2019; Acclimatise News, 'Can the Green Climate Fund Help Guyana Respond to Climate Change' (*Acclimatise,* 3 August 2018) 1-2 <www.acclimatise.uk.com/2018/08/03/can-the-green-climate-fund-help-guyana-respond-to-climate-change> accessed 16 July 2019..
[137] Technical Centre for Agricultural and Rural Cooperation, 'National Workshop: Climate Finance for Agriculture in Guyana' (2019) <www.cta.int/en/event/national-workshop-climate-finance-for-agriculture-in-guyana-sid03056d52e-f818-426c-9b97-6c0c763db10b> accessed 16 July 2019.
[138] Information on the outcomes of this workshop is not yet available online at the time of submitting this article.
[139] Bowman (n 24) 44.

investment at scale.[140] There is no evidence of any specific engagement by the Lab with stakeholders in Guyana.

3.2.2. Corporate Conduct

Guyana as a non-Annex I Party to the UNFCCC is required to submit a national communication every four years (though its most recent submission was in 2012),[141] which includes a national inventory of all greenhouse gas sources and sinks.[142] This inventory did not cover the corporate sector specifically (or even mention it) – the sectors reported on are the energy, industrial, agriculture, land use change and forestry, and waste sectors.[143]

Globally, there are an increasing number of companies measuring greenhouse gas emissions generated by their activities and assessing their exposure to climate change.[144] The OECD in its *Guidelines for Multinational Enterprises* encourages disclosure or communication practices on greenhouse gas emissions,[145] as such reporting is invaluable in enabling the reporting entity to make informed and robust decisions about climate action and finance required. Different initiatives exist globally, such as the Climate Disclosure Standards Board, which is an international consortium of business and environmental NGOs, as well as some countries are implementing programmes or legislation on climate-related corporate disclosures. For example, Article 173 of the Energy Transition for Green Growth Law in France requires investors to report on how environmental, social, and governance criteria, with climate specifically mentioned, are integrated into their decision-making.[146] There is no evidence in Guyana yet of such requirements on corporate conduct.[147]

3.2.3. Prudential Regulation and Banks

Key stakeholders in the banking sector, such as Yves Mersch, who is a Member of the Executive Board of the European Central Bank, acknowledge that national legislation and bank regulations do not adequately address climate risk and opportunity.[148] This also applies

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[140] The Lab, 'Global Innovation Lab for Climate Finance' (2019) <www.climatefinancelab.org/the-labs/global> accessed 5 August 2019.

[141] Guyana's most recent submission: Government of Guyana (n 125). Its submissions are available on: https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/national-communications-and-biennial-update-reports-non-annex-i-parties/national-communication-submissions-from-non-annex-i-parties.

[142] UN Decision 17/CP.8, art 1 (see also UNFCCC, art 12).

[143] Government of Guyana (n 125) 59-94.

[144] Céline Kauffmann, Cristina Tébar Less and Dorothee Teichmann, 'Corporate Greenhouse Gas Emission Reporting: A Stocktaking of Government Schemes' (2012) OECD Working Papers on International Investment, 11 <www.oecd.org/daf/inv/investment-policy/WP-2012_1.pdf> accessed 5 August 2019.

[145] OECD, *OECD Guidelines for Multinational Enterprises* (OECD 2011) 29.

[146] Loi n 2015-992 du 17 août 2015 relative à la transition énérgetique pour la croissance verte (French Energy Transition Law for Green Growth), art 173. See Kauffmann, Less and Teichmann (n 144) for further examples.

[147] Legislative and regulatory instruments reviewed: Financial Institutions, Cap. 75:01 (Act 1 of 1995); Financial Institutions (Amendment) Act (Act 9 of 199); Financial Institutions (Amendment) Act (Act 22 of 2004); Financial Institutions Act (Act 12 of 2015); Financial Institutions Regulations 1996 (4 of 1996); Bank of Guyana Act, Cap. 85:02 (Act 19 of 1998); Bank of Guyana (Amendment) Act (Act 21 of 2004); Bank of Guyana (Amendment) Act (Act 14 of 2018); Bank of Guyana, 'Supervision Guideline No. 8 on Corporate governance' and 'Supervision Guideline No. 9 on Risk Management' (1996) <www.bankofguyana.org.gy/bog/legal-regulatory-framework/supervision-guidelines> accessed 12 August 2019.

[148] Eg Environmental Audit Commons Select Committee, 'Greening Finance: Embedding Sustainability in Financial Decision Making' (*UK Parliament,* 6 June 2018)

within the Guyanese context – there is neither evidence of prudential regulation on climate change risks and opportunities being implemented by banks nor being required by national legislation – as well as at international level. Basel III is an internationally agreed set of measures aimed at strengthening the regulation, supervision, and risk management of banks.[149] In 2014, UNEP Finance Initiative (UNEP FI) and the University of Cambridge Institute for Sustainability Leadership (CISL) undertook a research project on Basel III and environmental risk. The project concluded that:

By failing to address systemic environmental risks, Basel III is arguably overlooking an important source of risk to the financial system and broader economy, despite its overriding objective of guaranteeing banking stability and sustainability. Because financial stability is a public good, regulation has a role to play to ensure that environmental risks do not threaten financial stability.[150]

Moreover, the value of incorporating climate change risks in the financial system generally, not just in relation to Basel III, has been recognised more widely by other researchers.[151] This literature and the UNEP FI and CISL project propose suggestions as to how to approach such integration.[152] If prudential regulation on climate finance is integrated into Basel III (or in future iterations of the framework), this will have implications for Guyana as the Bank Of Guyana intends to complete Basel III implementation by end-2019 and so it would likely implement any changes to the framework.[153]

3.2.4. Renewable Energy Targets and Renewable Portfolio Standards

Setting targets and standards can provide an enabling environment for mobilising finance, because if targets or standards are set, then resources are more likely to be allocated to achieving the targets and standards. Guyana committed unconditionally to the 'rapid expansion of a renewable energy supply' in its NDC,[154] with a conditional commitment to relying on 100% renewable energy by 2025 if 'adequate and timely financial support' can be accessed or is provided.[155] This condition appears to not have been met, as recently government officials stated that the 100% by 2025 target may need to be revised as a result of

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<https://publications.parliament.uk/pa/cm201719/cmselect/cmenvaud/1063/106302.htm> accessed 12 August 2019; BIS, 'Yves Mersch: Climate Change and Central Banking' (27 November 2018) <www.bis.org/review/r181128b.htm> accessed 12 August 2019; European Central Bank – Banking Supervision, 'We Need to Ensure Resilience to Climate-change Risk' (15 May 2019) <www.bankingsupervision.europa.eu/press/interviews/date/2019/html/ssm.in190515~d1ab906d59.en.html> accessed 12 August 2019.

[149] Basel Committee on Banking Supervision, *Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems* (Bank for International Settlements 2010, revised 2011).

[150] Cambridge Institute for Sustainability Leadership and UNEP Finance Initiative, *Stability and Sustainability in Banking Reform: Are Environmental Risks Missing in Basel III?* (CISL and UNEP FI 2014) 25.

[151] Eg Paolo D'Orazio, Lilit Popyan and Pierre Monnin, 'Prudential Regulation Can Help in Tackling Climate Change' (*Council on Economic Policies*, 13 February 2019) <www.cepweb.org/prudential-regulation-can-help-in-tackling-climate-change> accessed 8 August 2019; Kern Alexander, 'Can Banking Regulation Address Climate Change?' (*Milken Institute Review*, 18 June 2019) <www.milkenreview.org/articles/can-banking-regulation-address-climate-change> accessed 8 August 2019.

[152] Eg Cambridge Institute for Sustainability Leadership and UNEP Finance Initiative (n 150); D'Orazio, Popyan and Monnin (n 151); Alexander (n 151).

[153] International Monetary Fund, *Guyana: 2019 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for Guyana* (September 2019) IMF Country Report No 19/296, 14.

[154] Government of Guyana (n 101) 10.

[155] ibid 6, 10-11.

the significant financial resources, infrastructure, capacity building, legislative changes, and policy implementation that would be required by 2025.[156]

Four key assumptions were made in the NDC in relation to financial support for the target.[157] The first assumption that Guyana and Norway continue to renew and extend their bilateral agreement has been met.[158] Second, the GCF was to be fully operationalised and started to have disbursing funding from 2016; the GCF is operational and disbursing funds. One project has been approved so far by the GCF that aims to catalyse private sector investment for renewable energy and energy efficiency projects across the developing world, including Guyana.[159] There are two further projects in the pipeline that may be submitted to the GCF Board for consideration in the future:[160] a project on unlocking the potential of Guyana's inland and mangrove forests to further reduce emissions and to build resilience to climate change,[161] and a project on enhancing coastal resilience against climate change by the Caribbean Community Climate Change Centre,[162] which includes activities in Guyana.[163] The third assumption was that small island developing states, and in particular coastal low-lying countries such as Guyana, receive preferential access and special consideration in access to financing. The fourth assumption was that REDD+ and renewable energy programmes and projects will be resourced in a predictable, adequate and timely manner. These two final assumptions are more difficult to assess. Arguably the GRIF ensures that REDD+ projects are resourced in a predictable, adequate and timely manner as a result of the Administrative Agreement.[164] But, as is clear from the recent government statement, it is unlikely that the Government of Guyana considers all these assumptions to be adequately met, as it is likely it will revise its renewable energy target.

Renewable portfolio standards are regulations or policy instruments that require increased renewable energy production by setting a minimum amount of electricity that needs to be delivered from specified sources.[165] There is no evidence of such standards in Guyana. There has been some criticism of such standards; they can distract policy makers from 'addressing the tangible legal, regulatory, and economic obstacles faced by developers of renewable power projects' and that 'on its own would accomplish little more than a symbolic victory for advocates of renewable energy and climate change mitigation'.[166] A similar argument could

[156] Ministry of the President, '100 Percent Renewable Energy by 2025 Target to be Reviewed' *Department of Public Information News* (3 August 2018) <https://dpi.gov.gy/100-percent-renewable-energy-by-2025-target-to-be-reviewed> accessed 21 July 2019.
[157] Government of Guyana (n 101) 11.
[158] Section 3.1.1.
[159] GCF, 'Project FP038 Geeref Next' (2018) <www.greenclimate.fund/projects/fp038> accessed 1 August 2019.
[160] European Investment Bank, *Funding Proposal. FP038: GEEREF NeXt* (GCF 2017); GCF, 'Country Profiles: Guyana' (2019) <www.greenclimate.fund/countries/guyana> accessed 1 August 2019.
[161] Conservation International, *Concept Note: Unlocking the Potential of Guyana's Inland and Mangrove Forests to further Reduce Emissions and to Build Resilience to Climate Change* (GCF 2018).
[162] See Section 3.2.1 for more information on this Centre.
[163] Caribbean Community Climate Change Centre, *Concept Note: Enhancing Coastal Resilience Against Climate Change* (GCF 2016).
[164] Section 3.1.1.
[165] Eg Trent Berry and Mark Jaccard, 'The Renewable Portfolio Standard: Design Considerations and an Implementation Survey' (2001) 29 Energy Policy 263, 263.
[166] Jim Rossi, 'The Limits of a National Renewable Portfolio Standard' (2010) 42(5) Connecticut Law Review 1425, 1450.

be applied to renewable energy targets generally. They can remain useful nonetheless as part of the complementary mix of financial mechanisms and facilitative modalities.[167]

3.2.5. Measurement and Metrics

Tracking climate finance flows poses a challenge as the climate finance landscape is very fragmented[168] – this is not wholly unexpected as fragmentation is an inherent structural characteristic of current international relations.[169] This fragmentation is as a result of: the myriads of different sources and flows of climate finance, including from both private and public actors at different governance levels, and financial flows between countries and in-country;[170] mechanisms mobilising climate finance comprise both top-down and bottom-up approaches;[171] and there has been a growth in recent years in non-traditional donors through increased South-South finance.[172] This fragmentation of the climate finance landscape is, at least in part, a positive attribute,[173] as it is a symptom of the many different opportunities that exist and are starting to be explored. Similarly, in the Guyanese context the preceding sections have demonstrated that there are different sources of financial flows.

For the purpose of this article, the focus is on the tracking of climate finance facilitated by financial mechanisms, as facilitative modalities do not necessarily directly mobilise or leverage climate finance but help provide the enabling environment.[174] There does not seem to be a centralised mechanism or initiative for tracking finance flows in-country, but instead the different financial mechanisms often have reporting requirements that does make it possible to track them individually. For example, there is a record of the financial flows as a result of GRIF in the Norway and Guyana climate and forest partnership[175] and books of

[167] Eg Berry and Jaccard (n 165); George Buchman, 'The Effectiveness of Renewable Portfolio Standard Banding and Carve-outs in Supporting High-cost Types of Renewable Electricity' (2011) 39(7) Energy Policy 4105; Ingmar Ritzenhofen, John R Birge and Stefan Spinler, 'The Structural Impact of Renewable Portfolio Standards and Feed-in Tariffs on Electricity Markets' (2016) 255(1) European Journal of Operational Research 224.

[168] Eg Manish Bapna and Heather McGray, 'Financing Adaptation to a Warmer World: Opportunities for Innovation and Experimentation' in Lael Brainard, Abigail Jones and Nigel Purvis (eds), *Climate Change and Global Poverty* (Brookings Institution Press 2009) 10; Jonathan Pickering, Carola Betzold and Jakob Skovgaard, 'Editorial. Special Issue: Managing Fragmentation and Complexity in the Emerging System of International Climate Finance' (2017) 17(1) International Environmental Agreements 1, 5-8; Roberts and Weikmans (n 21).

[169] F Zelli and H van Asselt, 'The Institutional Fragmentation of Global Environmental Governance: Causes, Consequences, and Responses' (2013) 13(3) Global Environmental Politics 1, 3.

[170] Benjamin J Richardson, 'Climate Finance and its Governance: Moving to a Low Carbon Economy through Socially Responsible Financing' (2009) 58(3) The International and Comparative Law Quarterly 597, 601.

[171] Roberts and Weikmans (n 21) 131; Zahar, *Climate Change Finance and International Law* (n 20) 16.

[172] Eg the Republic of Korea and Panama contributed money to GCF (GCF, 'Resource Mobilization (2019) <www.greenclimate.fund/how-we-work/resource-mobilization> accessed 12 August 2019); and China pledged USD 3 billion in late 2015 to combat climate change in developing countries (Ma Tianjie, 'China Upgrades Climate Aid to the Global South' *chinadialogue* (20 September 2017) <www.chinadialogue.net/article/show/single/en/10086-China-upgrades-climate-aid-to-the-global-south> accessed 12 August 2019).

[173] Eg Ken MacClune, 'Financing from the Ground Up - Experiences in Adaptation Finance from Southeast Asia' (*Adaptation Watch*, October 2017) <www.adaptationwatch.org/#our-publications> accessed 15 January 2018.

[174] Section 2.3.

[175] GRIF Steering Committee, 'Operational Manual: Guyana REDD-Plus Investment Fund (GRIF)' (12 May 2011) 16-17, <www.guyanareddfund.org/images/stories/pdffiles/GRIF%20Operational%20Manual%20Version%201.0.pdf> accessed 12 August 2019.

accounts for the Environmental Trust Fund, which are subject to examination and audit at any time, need to be kept.[176]

Similarly, there is no central initiative measuring and reporting the outcomes and impacts of the financial mechanisms, though there are again some examples of individual measurements. For example, the Norway and Guyana climate and forest partnership requires reporting again performance indicators[177] and the CDM project requires measuring of greenhouse gas emissions to an extent in order to demonstrate that they are additional that would occur in the absence of the certified project activity.[178] The latter example is a clear demonstration of the limits of any measurements and metrics, as assumptions in relation to additionality 'are often not substantiated with credible, documented evidence'.[179]

3.3. Climate Finance Law in Guyana

This section has presented evidence of both financial mechanisms and facilitative modalities implemented in Guyana. In relation to the former, there are opportunities for in-country finance, such as the Environmental Trust Fund,[180] but most are currently aimed at facilitating finance from other countries to Guyana, such as the REDD+ Investment Fund, grants from developed countries,[181] and tax incentives for renewable energy activities.[182] There are some proposals to increase the number of financial mechanisms to enable climate finance resources in-country, including certain tax incentives[183] and feed-in tariffs.[184] The legal forms of these various mechanisms vary, though most are either implemented through national legislation or established by contracts.

There are fewer facilitative modalities than financial mechanisms implemented, though they are 'just as important as financial mechanisms, so regulators need to give equal attention to creating legal and policy environments that support them'.[185] The limited facilitative modalities that are present either do not have a legal form or, in one case, is set out in a policy document –across other international case studies, research has been shown that the legal forms of facilitative modalities can range from national legislation to contractual arrangements.[186]

4. Tensions and Synergies between Climate Finance Law and the Financing of Oil Discovery and Production

The Legal Analytical Framework of Climate Finance Options is now applied within the context of oil exploration and production to identify possible synergies or tensions with Guyanese climate finance law. An evaluation of the extent of these is beyond the scope of this article, as again the focus is instead limited to scoping the existence of them. Even

[176] Environmental Protection Act, s 65.
[177] Frankfurt School – UNEP Collaborating Centre for Climate & Sustainable Energy Finance (n 67) 20-22.
[178] Kyoto Protocol, art 12(5).
[179] Lambert Schneider, 'Assessing the Additionality of CDM Projects Practical Experiences and Lessons Learned' (2009) 9(3) Climate Policy 242, 243.
[180] Section 3.1.1.
[181] Section 3.1.1.
[182] Section 3.1.3.
[183] Section 3.1.3.
[184] Section 3.1.5.
[185] Bowman and Steenmans, *Climate Finance Law* (n 24) 16.
[186] Bowman (n 24) 40.

though the Framework was developed for reviewing climate finance law implementation, it is applied within the context of oil production. This is to limit the types of finance options for oil discovery and production reviewed in this article, as there are many more and different actors and instruments that would need to be considered if undertaking a holistic review.

4.1. Financial Mechanisms

Not all the financial mechanisms of the Legal Analytical Framework are relevant within the oil context, because they are specific in their application and can only be considered within the climate finance context; such as carbon pricing and feed-in tariffs. The other mechanisms not considered and reasons why as part of the scoping review are highlighted in Table 4. There is evidence of a number of financial mechanisms supporting oil exploration and production, with the mechanisms present generally in tension with climate finance options, though there are possible synergies, as discussed in the following subsections.

FINANCIAL MECHANISMS		**SYNERGY (S)OR TENSION (T)**	**COMMENTS**	**LEGAL FORM**				
				National legislation	Other regulation	Policy & strategic docs	Contract	N/A
Blended finance	Green investment banks	N/A – there is no equivalent to consider within the oil industry						
	Climate Trust Funds	T / S	Sovereign Wealth Fund	✓				
	Guarantees & insurance	No evidence of any requirements in Guyana existing in relation to environmental protection for oil companies. Currently many companies self-insure						
	Grants & loans	T	Guyana Petroleum Resources Governance and Management Project				✓	
	PPPs & CDM	T / S	Public-Private Partnership (PPP) Policy Framework			✓		
Carbon pricing	Carbon & coal taxes	N/A – these would be a financial hurdle to the oil industry and be a clear synergy with climate finance, but none exist as already discussed in Section 3.1.2						
	Emissions trading systems							
Tax credits & incentives	Investment & production tax credits	T	Some foreign tax credits available		✓			
	Tax incentives for green activity	T	Modification of tax laws permitted	✓				
			Tax holidays for up to ten years for certain petroleum exploration, extraction, and refining activities creating employment	✓				
			Petroleum capital expenditure allowance may be claimed	✓				

Green bonds	N/A – there is no equivalent to consider within the oil industry						
Feed-in tariffs	N/A – there is no equivalent to consider within the oil industry						
Remove fossil fuel subsidies	T	Fossil fuels are subsidised			✓		

Table 4. Non-exhaustive overview of possible synergies and tensions of financial mechanisms for oil exploration and production with climate finance options in Guyana. If there is a synergy or tension, this indicates the mechanism is present for oil exploration and production.

4.1.1. Blended Finance

At the start of 2019, Guyana assented the Natural Resource Fund Act,[187] which establishes a sovereign wealth fund to be called the Natural Resource Fund (NRF). Sovereign wealth funds are government-owned investment vehicles that are 'typically funded by commodity export revenues or the transfer of assets directly from official foreign-exchange reserves'.[188] They are usually set up to stabilise government and export revenues, accumulate savings for future generations in resource-rich countries to offset the future lack of natural resources, and/or manage foreign reserves.[189] The purpose of the NRF is

> to manage the natural resource wealth of Guyana for the present and future benefit of the people in an effective and efficient manner by –
> (a) ensuring that volatility in natural resource revenues do not lead to volatile public spending;
> (b) ensuring that natural resource revenues do not lead to a loss of economic competitiveness;
> (c) fairly transferring natural resource wealth across generations to ensure that future generations benefit from natural resource wealth; and
> (d) using natural resource wealth to finance national development priorities including any initiative aimed at realising an inclusive green economy.[190]

The latter purpose ties in with climate action; 'inclusive green economy' is defined as 'an economy that improves human well-being and builds social equity while reducing environmental risks and scarcities'.[191] There is thus a possible synergy with climate finance law as the purpose of the NRF set out in (d) can include financing climate mitigation and adaptation actions, as equity and improvement of human well-being should be integral

[187] Natural Resource Fund Act (Act 12 of 2019).
[188] Shams Butt and others, 'Sovereign Wealth Funds: A Growing Global Force in Corporate Finance'(2008) 20(1) Journal of Applied Corporate Finance 73, 73. See also: Bader Alhashel, 'Sovereign Wealth Funds: A Literature Review' (2015) 78 Journal of Economics and Business 1, 2. See also: Roland Beck and Michael Fidora, 'The Impact of Sovereign Wealth Funds on Global Financial Markets' (2008) 43(6) Intereconomics 349, 349.
[189] Joshua Aizenman and Reuven Glick, 'Sovereign Wealth Funds: Stumbling Blocks or Stepping Stones to Financial Globalization?' [2007] CPBS Annual Report 11, 11; Beck and Fidora (n 188) 349; Danyel Reiche, 'Sovereign Wealth Funds as a New Instrument of Climate Protection Policy? A Study of Norway as a Pioneer of Ethical Guidelines for Investment Policy' (2010) 35 Energy 3569, 3569; Dariusz Urban, 'The Role of Sovereign Wealth Funds in Global Management of Excess Foreign Exchange Reserves' (2011) 14(2) Comparative Economic Research 143, 144; Alhashel (n 188) 2; Qiang Wang and Rongrong Li, 'Impact of Cheaper Oil on Economic System and Climate Change: A SWOT Analysis' (2016) Renewable and Sustainable Energy Reviews 925, 926.
[190] ibid s 3(2).
[191] ibid s 2.

dimensions of these.[192] This possible synergy is further emphasised by the intended limited uses of this fund: withdrawals from the NRF

> shall be used only to finance
> (a) national development priorities including any initiative aimed at realising an inclusive green economy; and
> (b) essential projects that are directly related to ameliorating the effect of a major natural disaster.[193]

Inherent tensions with climate finance law remain, as deposits into the NRF include revenues from the production of petroleum resources,[194] which can contribute to climate change.[195] NRF funding of oil extraction projects is not excluded if it is argued that would be used to develop a green economy and avoid a major natural disaster. There is evidence that this is a possibility as the Officer at the Ministry of Natural Resources has stated that the green economy and oil extraction are not incompatible.[196] Moreover, there is also a risk that oil development projects risk locking-in high-carbon industrial activities and are thus incompatible with Guyana's ambition to use 100 per cent renewable energy by 2025.[197]

Guarantees and insurance instruments are considered in this article in relation to environmental protection. Currently, there is no policy in Guyana that provides guidance on whether oil exploration and production companies can self-insure or require an internationally recognised insurance policy.[198] For example, currently the ExxonMobil contract with the Government of Guyana allows the company to self-insure, meaning that it will handle any liabilities resulting from, for example, a possible oil spill.[199] There are opportunities for these to exist in Guyana, such as MIGA[200] political risk guarantees for oil and gas investments that can support companies in assessing a project's potential environmental risks and impacts.[201]

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[192] Eg W Neil Adger, 'Climate Change, Human Well-being and Insercurity' (2010) 15(2) New Political Economy 275, 286-288; Marc Fleurbaey and others, 'Sustainable Development and Equity' in O Edenhofer and others (eds), *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2014) 287; William F Lamb and Julia K Steinberger, 'Human Well-being and Climate Change Mitigation' (2017) 8 WIREs Climate Change 1, 1, 5-6 and 10.

[193] Natural Resource Fund Act 2019, s 22(2).

[194] ibid s 21(1)-(3).

[195] Section 1.

[196] Carinya Sharples, 'Guyana Seeks Offshore Oil Wealth in a Green Economy' *Mongabay* (21 November 2017) <https://news.mongabay.com/2017/11/guyana-seeks-offshore-oil-wealth-in-a-green-economy> accessed 16 December 2019.

[197] Siân Bradley, Glada Lahn and Steve Pye, 'Carbon Risk and Resilience: How Energy Transition is Changing the Prospects for Developing Countries with Fossil Fuels' (Chatham House 2018) 47. www.chathamhouse.org/sites/default/files/publications/research/2018-07-12-carbon-risk-resilience-bradley-lahn-pye.pdf

[198] Kaieteur News, 'Demand Comprehensive Insurance from all Oil Companies – World Bank' *Kaieteur News* (2 December 2018) <www.kaieteurnewsonline.com/2018/12/02/demand-comprehensive-insurance-from-all-oil-companies-world-bank> accessed 12 August 2019; Kaieteur News, 'Oil Spill Readiness … Insurance Policy a Must for Operators' *Kaieteur News* (12 February 2019) <www.kaieteurnewsonline.com/2019/02/12/oil-spill-readiness-insurance-policy-a-must-for-operators-going-forward-energy-dept-head> accessed 12 August 2019.

[199] ibid.

[200] Section 3.1.1.

[201] MIGA, 'MIGA: Securing Oil and Gas Investments' (2015) 1 <www.miga.org/sites/default/files/2018-06/oil-gas-brief.pdf> accessed 12 July 2019.

There is evidence of grants for oil production. Despite the World Bank stating that it will no longer finance upstream oil and gas production,[202] the World Bank approved a grant of USD 20 million for the Guyana Petroleum Resources Governance and Management Project.[203] This project will support the enhancement of legal and institutional frameworks, and the strengthening of the capacity of key institutions to manage the oil and gas sector in Guyana.[204] The World Bank in it its statement did state that in 'exceptional circumstances' it would consider giving finance to poorest countries 'where there is a clear benefit in terms of energy access for the poor and the project fits within the countries' Paris Agreement commitments'.[205] Moreover, it also expressed its intention to 'continue to provide technical assistance that helps client countries strengthen the transparency, governance, institutional capacity and regulatory environment for their energy sector – including oil and gas'.[206] So, even though climate change mitigation only constitutes two per cent of the project and the extent to which supporting oil production actually aligns with Guyana's Paris Agreement commitments is debatable,[207] the project remains within the World Bank's funding remit.

The CDM is not relevant within the oil industry context, but PPPs generally are. The *Public-Private Partnership Policy Framework* encourages PPPs to be adopted for conventional electricity sectors in addition to renewable electricity sectors.[208] There is thus a possible synergy as the aim is to encourage PPPs generally, but simultaneously any PPPs set up to facilitate oil exploration and production would be in conflict with the aims of climate mitigation and adaptation.

4.1.2. Tax Credits and Incentives

In comparison to tax incentives for green activity, more exist for oil exploration and production,[209] including permitted modification of tax laws, a petroleum capital expenditure allowance, and tax holidays. There is thus no additional – and even arguably less – incentive for financing climate action in comparison to oil exploration and production in the form of tax incentives.

First, the Petroleum (Exploration and Production) Act[210] provides in section 51 that modification of tax laws is permitted:

> (1) The Minister assigned responsibility for finance may, by order, which shall be subject to affirmative resolution of the National Assembly, direct that any or all of

[202] The World Bank, 'World Bank Group Announcements at One Planet Summit' (12 December 2017) <www.worldbank.org/en/news/press-release/2017/12/12/world-bank-group-announcements-at-one-planet-summit> accessed 29 July 2019.
[203] The World Bank, 'Guyana Petroleum Resources Governance and Management Project' (2019) <http://projects.worldbank.org/P166730?lang=en> accessed 29 July 2019.
[204] ibid.
[205] The World Bank (n 202).
[206] The World Bank and International Development Association, 'Project Appraisal Document on a Proposed Credit in the amount of SDR 14,300,000 (US$20 Million Equivalent) to the Co-operative Republic of Guyana for a Guyana Petroleum Resources Governance and Management Project' (1 March 2019) Report No. PAD3022, 6 <http://documents.worldbank.org/curated/en/943971554170648125/pdf/Guyana-Petroleum-Resources-Governance-and-Management-Project.pdf> accessed 6 August 2019.
[207] ibid. See also text to n 197.
[208] Section 3.1.1.
[209] Overview of all taxes relevant to oil and gas industry in Guyana: EY, *Global Oil and Gas Tax Guide 2019* (EY 2019) 264-268.
[210] Petroleum (Exploration and Production) Act, Cap. 65:10 (Act 3 of 1986).

the written laws mentioned in subsection (2) shall not apply to, or in relation to, a licensee where the licensee has entered into a production sharing agreement with the Government of Guyana.

(2) The written laws referred to in subsection (1) are –
  (a) the Income Tax Act;
  (b) the Income Tax (In Aid of Industry) Act;
  (c) the Corporation Tax Act; and
  (d) the Property Tax Act.

A licensee is defined as the holder of a petroleum prospecting licence or a petroleum production licence.[211]

Second, section 33B of the Income Tax Act[212] provides that when calculating chargeable income for corporation tax purposes, a petroleum capital expenditure allowance may be claimed from the first year of production.

Third, similarly to tax holidays granted for certain renewable energy activities,[213] tax holidays for up to ten years are also granted for activities creating new employment in the field of 'petroleum exploration, extraction and refining'.[214] This means that there is no additional incentive for renewable energy activities, as the same exists for oil exploration and production.

There are some available foreign tax credits as a result of double tax treaties with Canada,[215] the UK,[216] and Caribbean Common Market (CARICOM) countries.[217] For example, the Convention between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Co-operative Republic of Guyana for the Avoidance of Double Taxation and the Prevention of Fiscal Evasion with Respect to Taxes on Income and Capital Gains, contained in The Double Taxation Relies (Taxes on Income) (Guyana) Order 1992, allows tax payable under Guyanese laws to be a tax credit against any UK tax (subject to provisions in the Order).[218]

The above discussion also highlights the overlaps that exist within the Legal Analytical Framework for Climate Finance, as several of the credits and incentives below could be considered fossil fuel subsidies.

[211] Petroleum (Exploration and Production) Act, s 2(1).
[212] Income Tax Act, Cap: 81:01 (Act 17 of 1929).
[213] Section 3.1.3.
[214] Income Tax (In Aid of Industry) Act, Cap. 81:02 (Act 16 of 1951), s 2(1)(b)(iii).
[215] Convention Between Canada and the Cooperative Republic of Guyana (15 October 1985), art 20(2).
[216] The Double Taxation Relies (Taxes on Income) (Guyana) Order 1992.
[217] Agreement among the Governments of the Member States of the Caribbean Community for the Avoidance of Double Taxation and the Prevention of Fiscal Evasion with Respect to Taxes on Income, Profits or Gains and Capital Gains and for the Encouragement of Regional Trade and Investment (Barbados, 7 July 1995; in force 30 November 1994). Guyana ratified the Agreement on 26 November 1997.
[218] The Double Taxation Relief (Taxes on Income) (Guyana) Order 1992, art 24(1).

4.1.3. Fossil Fuel Subsidies

Guyana subsidises the energy sector;[219] between 2008 and 2014 the average energy subsidy for fuel was 1.3% of GDP.[220] As discussed in Section 3.1.6, these are not expected to be removed soon as a highlighted by a recent statement by the Guyanese Minister of Finance.

4.2. Facilitative Modalities

There is evidence of facilitative modalities for oil exploration and production as set out in Table 5. They are predominantly in tension with climate finance options to the extent that oil exploration and production activities are generally in conflict with climate change mitigation and adaptation activities.[221] Whether the modalities are therefore in synergy or tension is therefore not considered for each individually, as the same argument would be presented repetitively.

Similar to the financial mechanisms, not all facilitative modalities are considered within the oil exploration and production context. For example, corporate conduct and prudential regulation and banks are not considered as these apply to companies generally, including those within the oil industry, and are therefore already discussed in Section 3.

FACILITATIVE MODALITIES		**PRESENT**	**COMMENTS**	**LEGAL FORM**				
				National legislation	Other regulation	Policy & strategic docs	Contract	N/A
Knowledge sharing & capacity building	Centralised information services	✓	Data and information is received by the Guyana Geology and Mines Commission	✓				
			National Petroleum Data Repository is to be set up				✓	
	Matchmaking & training schemes	✓	TOTALTEC Oilfield Services provides training for Guyanese technicians and engineers					✓
			Public lectures organised by the Guyana Oil & Gas Association					✓
	Idea Labs	x	No evidence	N/A				
Corporate conduct	General GHG emissions reporting	N/A – reflects discussion in Section 3.2.2, as this was in relation to companies generally, including those within oil						

[219] Gabriel Di Bella and others, 'Energy Subsidies in Latin America and the Caribbean: Stocktaking and Policy Challenges' (2015) IMF Working Paper WP/15/30, 20 <www.imf.org/external/pubs/ft/wp/2015/wp1530.pdf> accessed 23 July 2019.

[220] Estefanía Marchán, Ramón Espinasa and Ariel Yépez-Garcia, *The Other Side of the Boom: Energy Prices and Subsidies in Latin America and the Caribbean During the Super-Cycle* (IDB 2017) 64. The 2011-2013 estimate for subsidies for fuels is 1.7% of GDP according to Di Bella and others (n 219) 10. Note: more recent estimates are currently not available online.

[221] Section 1.

	Climate-related corporate disclosures	industry		
Prudential regulation & banks		N/A – reflects discussion in Section 3.2.3, as this was in relation to companies generally, including those within oil industry		
Measurement & metrics	Tracking finance flows in-country	✓*	No central mechanism but this is required for some financial mechanisms	Legal form depends on the particular mechanism
	Outcomes & impacts of financial mechanisms (e.g. green bonds)	x	No evidence	N/A

Table 5. Non-exhaustive overview of facilitative modalities for oil exploration and production with climate finance options in Guyana: present (✓), absent (x), present in certain circumstances (✓).*

4.2.1. Knowledge Sharing and Capacity Building

Similarly to the climate finance context, there is recognition that

> 'As a new oil and gas producer, Guyana lacks the policy, legal and regulatory frameworks and institutional capacity needed to maximize the benefits from expected oil revenues and minimize downside risks associated with oil revenues and growth of the sector'.[222]

There is some evidence of ongoing and planned initiatives aimed at sharing knowledge and building capacity, though there is no evidence of any idea labs.

There are large volumes of oil and gas information and data being generated and shared by companies as required by their contracts and licenses.[223] For example, the contracts between the Government of Guyana and Repsol, and the Government of Guyana and Esso Exploration and Production Guyana, CNOOC Nexen Petroleum Guyana, and Hess Guyana Exploration requires

> [a]ll data, well logs, maps, magnetic tapes, cuts of cores and cutting samples and all other geological and geophysical information … and all geological, technical, financial and economic reports, studies and analyses generated … shall be submitted to the Minister in accordance with the [Petroleum (Exploration and Production) Regulations 1986].[224]

The Guyana Geology and Mines Commission is, however, being overwhelmed by all this petroleum data, as there are currently no facilities, personnel, or equipment to support this

[222] The World Bank and International Development Association (n 206) 9.
[223] Petroleum (Exploration and Production) Act, s 70(2)(o).
[224] Petroleum Agreement between the Minister Responsible for Petroleum Representing the Government of the Republic of Guyana and Repsol Exploración S.A. (14 May 2013), art 9.1(b). Available on: <https://resourcecontracts.org/contract/ocds-591adf-1215811760/download/pdf>; Petroleum Agreement between the Government of the Cooperative Republic of Guyana and Esso Exploration and Production Guyana Limited, CNOOC Nexen Petroleum Guyana Limited, Hess Guyana Exploration Limited (27 June 2016) art 9(1)(b). Available on: <https://gyeiti.org/wp-content/uploads/Petroleum-Agreement-Oct-7-2016.pdf>.

data management.[225] The Guyana Petroleum Resource Governance and Management Project[226] will support the building of a new National Petroleum Data Repository in Guyana, which will collect and store existing data.[227] This Repository has not yet been established.

There are also examples of some matchmaking and training schemes. The Guyana Oil & Gas Association is a private sector organisation set up to promote a robust oil and gas industry and to advocate for comprehensive science-based policies and effective and transparent market principles.[228] The Association organises public lectures – past topics have included, *inter alia*, corporate social responsibility in small oil producing states, cultural impact on safety in oil and gas, the structure, governance and legal aspects of sovereign wealth funds, and the establishment and maintenance of a viable and successful framework for oil and gas development in Guyana.[229]

TOTALTEC Oilfield Services is a local Guyanese company created to support the oil and gas industry. Its main priority is as an educational vehicle in-country for the Guyanese technicians and engineers that the industry will be recruiting.[230] TOTALTEC therefore has three key functions: (1) recruit, train, provide, and support qualified personnel for the oil and gas industry; (2) provide facilities and necessary supporting functions to fulfil its first function; and (3) form partnerships with companies.[231] For example, there is currently a TOTALTEC Academy that combines classroom and practical training, which has the ambition to train at least 100 Guyanese annually, with the first Guyanese graduates having completed the training programme in 2019 as part of a joint project with Guyana Shore Base Inc, a Guyanese-owned shore base facility that supports the oil and gas industry in Guyana.[232]

These knowledge sharing and capacity building activities and initiatives present neither synergies nor tensions with climate finance based on a desk-based review (beyond the already discussed tension that exists between climate finance and oil exploration and production generally and the possible synergy as a result of the NRF).[233] There is potential for some more synergies through, for example, requiring climate mitigation commitments, such as carbon offsetting, by licensees.

4.2.2. Measurement and Metrics

Similar to discussions in Section 3.2.5 in relation to climate finance options, there is no centralised mechanism tracking financing for oil exploration and production. Again, there are

[225] The World Bank and International Development Association (n 206) 16-17.
[226] Section 4.1.1.
[227] The World Bank and International Development Association (n 206) 16-17.
[228] Guyana Oil & Gas Association, 'Guyana Oil & Gas Association' (2017) <http://goga.gy> accessed 6 August 2019.
[229] Guyana Oil & Gas Association, 'Public Lecturer Series' (2017) <http://goga.gy/public-lecture-series> accessed 6 August 2019.
[230] TOTALTEX Oilfield Services, 'Pioneering Guyanese Establishes Oilfield Support and Services Company' *Guyana Invest* (2017/18) 40 <http://goinvest.gov.gy/wp-content/uploads/Invest-Guyana-2017.pdf> accessed 6 August 2019.
[231] TOTALTEC Oilfield Services, 'TOTALTEC Oilfield Services' (2018) <www.totaltec-os.com> accessed 6 August 2019.
[232] Charlie Cosad, 'TOTALTEC Academy Graduates First of 120 Guyanese in Historic Drive to Ramp Up Supply Base Capacity' (*TOTALTEC Oilfield Services,* 22 July 2019) <www.totaltec-os.com/post/totaltec-academy-graduates-first-of-120-guyanese> accessed 8 August 2019.
[233] Section 4.1.1.

examples of tracking requirements in relation to individual mechanisms, such as the NRF requires the Bank of Guyana to 'maintain proper books of accounts and records' for the NRF.[234] There are, however, no requirements in relation to accounting for impacts and outcomes from the expenditure of funds from the NRF, which would help provide insight into its effectiveness.

5. Conclusion

The wider contribution of this article is to the emerging field of climate finance law by reviewing the Guyanese experience to date. This article adopted the Legal Analytical Framework of Climate Finance Options developed by Bowman[235] to structure a scoping review of climate finance law in Guyana. The non-exhaustive review demonstrated that there is evidence of both financial mechanisms and facilitative modalities implemented through different legal forms that can help create an enabling legal and regulatory environment for climate finance in Guyana.[236] Having provided an overview of the climate finance options, further research is now needed on their adequacy and effectiveness – and the development of requisite metrics needed to measure these – to investigate whether these actually result in an enabling environment, and, if so, how to motivate their wider uptake.

This article has also reviewed a number of climate finance options that are not yet implemented. The gaps in financial mechanisms include a green investment bank, carbon pricing mechanisms, green bonds, feed-in tariffs, and the removal of fossil fuel subsidies, while the facilitative modalities in relation to corporate conduct, prudential regulation, and measurement and metrics are not yet taken up. Within the context of significant additional climate financing needed in Guyana, these present opportunities to explore further to assess their appropriateness within the Guyanese context to enable the mobilisation and leveraging of financial resources.

The other contribution of this article was the identification of possible tensions and synergies with finance options for oil exploration and production. There is a fundamental conflict between the funding of activities that produce greenhouse gas emissions, which result from oil exploration and production activities, and activities mitigating climate change by aiming to reduce greenhouse gas emissions. There are a number of financing options – in particular grants, tax incentives, and subsidies – which directly counteract some of the climate finance options, though some financing mechanisms for climate adaptation and mitigation activities originate from oil exploration and production, particularly the NRF. The effect of both green and brown finance simultaneously impedes and limits the development of an enabling legal and regulatory environment for climate finance. Further research should investigate the feasibility of and opportunities for 'greening' the identified brown finance and the extent to which this is possible.

Financing is, however, only one of the many 'formidable challenges' faced by Guyana in relation to climate change[237] and also more widely; Guyana is also focused on improving its education, healthcare, and infrastructure.[238] Climate finance in Guyana therefore needs to be

[234] Natural Resource Fund Act, s 37.
[235] Bowman (n 24).
[236] See text to n 50 and 56.
[237] Catherine Hickey and Tony Weis, 'The Challenge of Climate Change Adaptation in Guyana' (2012) 4(1) Climate and Development 66, 66, 72 and 73.
[238] Text to n 12 - 13.

further investigated within the wider Guyanese economic and social context. Such research will require critical analysis of equity and justice dimensions of climate finance law, and of the resultant balancing of needs that may be required in addressing the challenges facing Guyana. Questions of how to achieve effective, adequate, and scaled up climate finance flows while also embedding equity and justice principles are not limited to Guyana, but present profound challenges globally.